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The Oil Man's Calendar

APR.	
11	**Pacific Coast District A.P.I. Division of Production, Los Angeles.**
13-14	**National Petroleum Association, Cleveland, Ohio.**
18-19	**Mid-Continent District, American Petroleum Institute Division of Production, Oklahoma City.**
18-20	**Southwest Gas Measuring Short Course, Norman, Oklahoma.**
24-29	**Oil-World Exposition, Houston, Texas.**
MAY	
3-5	**Petroleum Electric Supply Association, Houston, Texas.**
3-5	**Petroleum Industry Electrical Association, Houston, Texas.**
3-5	**Natural Gasoline Association of America, Tulsa, Oklahoma.**
9-11	**American Institute of Chemical Engineers, Akron, Ohio.**
15-18	**American Petroleum Institute, Mid-Year Meeting, New Orleans, Louisiana.**
18-20	**National Oil Scouts Association, Houston, Texas.**
21-25	**National Association of Purchasing Agents, San Francisco.**
JUNE	
3	**Illinois-Indiana Petroleum Association, Robinson, Illinois.**
15-16	**Pennsylvania Grade Crude Oil Association, Hershey, Pa.**
AUG.	
1-6	**The Eastern United States Michigan Oil & Gas Exposition, Mt. Pleasant, Michigan.**

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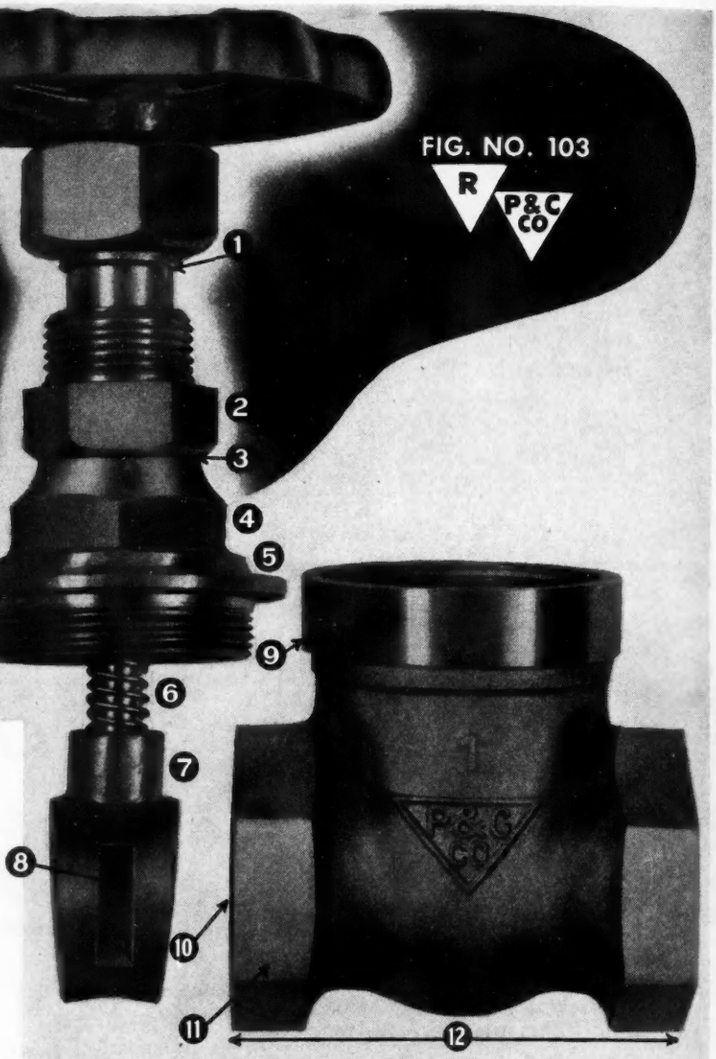

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This Week's Panorama

ALTHOUGH the Texas Railroad Commission's allowable-juggling act has left the industry in a nervous condition, not knowing what to expect next, it is promised that the national situation may remain fairly satisfactory at least through April.

For the Texas commission asserted in again revising its April order on April 5 that the total state allowable remained about 25,000 barrels below the indicated daily market demand, as estimated by the Bureau of Mines.

Such an allowable for Texas indicated that United States production in April should approximately balance with demand, as California, Louisiana, New Mexico, and Oklahoma also adopted allowables below estimated demand, while Kansas has temporarily extended the March allowables and therefore will hold production virtually within market demand. These six states account for approximately 90 percent of United States production.

Third Texas Order Issued

The Texas Railroad Commission's three members issued their original April order March 21, continuing old allowables but lifting Saturday shutdowns. When operators protested that the order would cause overproduction and a collapse of crude prices, Commissioner Ernest Thompson advocated restoration of the Saturday closings; but Commissioners Smith and Sadler on March 30 ordered lifting of Saturday shutdowns as originally planned but drastic reduction of field allowables in West Texas, Southwest Texas, and Coastal Texas more than offsetting the increased production permitted by the opening of wells on Saturdays.

The March 30 order brought a storm of protests from the areas of reduced allowables plus a temporary restraining order against the allowables in several Gulf Coast fields, granted in federal district court at Houston.

Consequently, Commissioners Sadler and Smith on April 5 again revised allowables, partially or wholly restoring the amounts that had been taken away from the fields of Coastal, Southwest, and West Texas.

Meanwhile, legislators from South and West Texas contemplated introducing a bill proposing to remove oil regulation from the railroad commission to an appointive commission.

April 17 Hearing Awaited

Commissioner Sadler declared at Houston April 6 that the railroad commission had done all it was going to do "for the present."

But the future of Texas proration was highly obscure.

The industry awaited with interest and concern the commission's monthly statewide proration hearing scheduled at Austin April 17, in preparation for the promulgation of May allowables.

Also awaited were further developments in the suit of the Abercrombie and Harrison interests, of Houston, in which the plaintiffs obtained a temporary restraining order against enforcement of the drastically curtailed allowables in several Gulf Coast fields.

Meanwhile, some Gulf Coast operators contemplated filing of additional suits to test the validity of various phases of proration as now set up in Texas. In this connection, it was said that many operators had long been dissatisfied with proration and that the drastic reductions of Gulf Coast allowables had brought the matter "to a head."

Texas Events Cloud Industry's Outlook

In consequence of the handling of the Texas allowables for April, therefore, Texas proration apparently has become materially less secure.

And inasmuch as the stability of the industry depends greatly on orderly production in Texas, the largest producing state, the outlook for the whole industry has been clouded.

Sadler in the Stirrup

The readjustments of Texas allowables through the orders for April, reducing quotas in some fields while leaving them unchanged in others, reflect the new control of the railroad commission by Lon Smith and Jerry Sadler. The latter came into office at the beginning of this year, having prevailed upon Texas voters to oust C. V. Terrell as a commissioner and to "put Sadler in the saddle."

It was generally predicted that Sadler and Smith would be likely to vote together, as Commissioner Ernest O. Thompson had supported Terrell in the campaign against Sadler, while teaming with Terrell against Smith in railroad commission decisions.

But the definite alignment of Sadler and Smith did not occur until those commissioners voted Thompson down on his proposal to continue both Sunday and Saturday shutdowns.

Under the Thompson-Terrell control, the Texas Railroad Commission was consistently conservative in setting allowables, and the commission not only maintained strict control of production but also kept operators fairly well satisfied throughout the state, as evidenced by its avoidance of attack in the courts.

Under the new, Smith-Sadler control, the commission originally ignored but later observed the Bureau of Mines estimate of market demand; but numerous

operators protested that allowables were arbitrarily set and therefore invalid, and a federal court questioned the action of the commission to the extent of granting a temporary restraining order against enforcement of the commission's order.

Business Relatively Active

Business in general continues around the same levels as in the past few months. No appreciable further gains are being made, but activity remains well above the levels of a year ago.

Steel mills are operating at about 55 percent of capacity, as compared with 34 percent a year ago. Automobile production continues about 50 percent above last year's levels. Electric power production is running 10 percent higher than last year.

Home building is the most extensive in 10 years, and lumber production and shipments are considerably higher than at this time last year.

Sales in most lines are running well ahead of those last year, and freight car loadings are up around 10 percent.

Approximately 100,000 more workers were employed in industry at the middle of February than one year previously.

Gasoline Stocks Above Requirements

THE industry became more conservative in its refinery runs in the final week of March and consequently was able to cut gasoline stocks down a little and to enter the spring-summer season April 1 with a fairly moderate inventory of 87,277,000 barrels of that product.

The industry thus reached the end of March this year in a considerably better statistical position than it occupied on March 31 last year, when the gasoline stocks totaled over 92,000,000 barrels and when gasoline demand was less favorable than now. (Currently, the consumption of gasoline is running about 5 percent higher than a year ago.)

However, the large gasoline stocks of last spring led to greatly depressed markets, from which the industry still has not recovered, and can not be regarded as a pattern for this year.

Even at the present level and under the current improved conditions, the gasoline stocks are larger than desirable. Petroleum economists estimated that 80,000,000 barrels of gasoline storage would be quite adequate on March 31 this year.

Inasmuch as they actually totaled 87,277,000 barrels on April 1, however, the gasoline stocks were about 7,000,000 barrels, or 9 percent larger than necessary.

The industry is ahead to that extent, therefore, in the production of gasoline; and if it is to avoid carrying that surplus on into the fall-winter season, when excess stocks seriously burden the markets, it must liquidate the surplus in the spring and summer through extremely conservative refinery runs.

In the week ended April 1, crude oil runs to stills averaged 3,170,000 barrels daily, having been reduced 55,000 barrels from the previous week's rate. At the curtailed level, the runs were less than 1 percent higher than in the corresponding week of last year.

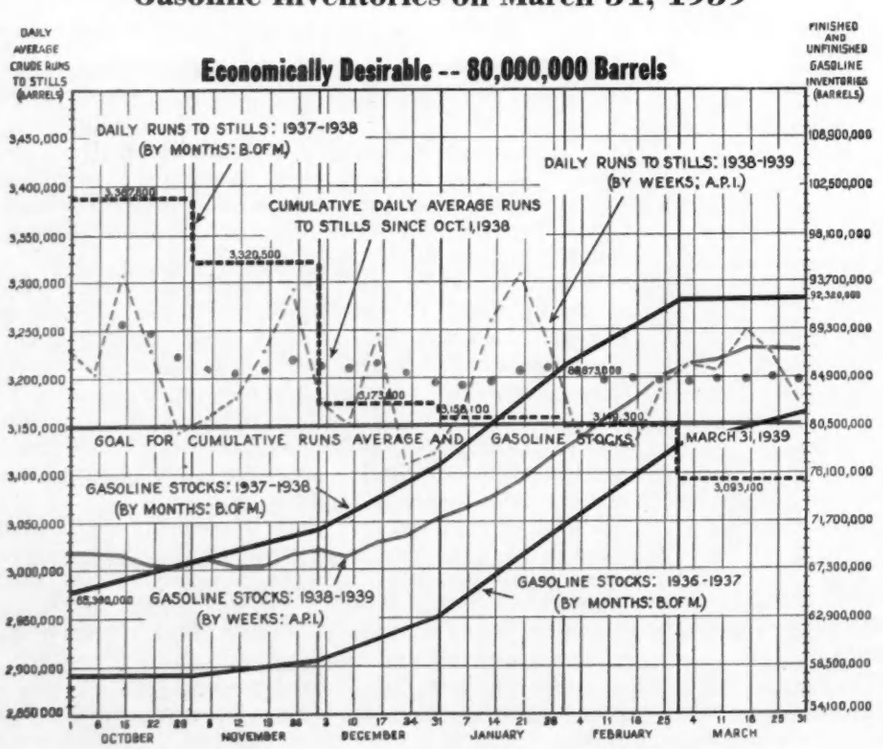
Cumulative refinery runs in the six months from October 1 to March 31 averaged 3,199,231 barrels daily.

As indicated in the accompanying chart, it had been calculated that cumulative runs of 3,150,000 barrels daily for the fall-winter season would result in the economically desirable March 31 gasoline inventory of 80,500,000 barrels.

According to the chart, the actual cumulative runs, having averaged approximately 3,200,000 barrels daily, as indicated by the colored dot, should have resulted in March 31 stocks of about 85,000,000 barrels (reading the scale on the right at a point parallel with the colored dot). Inasmuch as the gasoline stocks on March 31 were in reality about 87,000,000 barrels, the chart proved highly accurate.

The chart was prepared by Fred Van Covern of New York, director of statistics for the American Petroleum Institute, and has been maintained and published each week in these columns, in the interest of economic regulation of refinery runs and gasoline inventories.

Gasoline Inventories on March 31, 1939



Note the pulleys and pipes which convey the flexible line from the derrick to the geologist's "dog house" in which the geolograph is located.

Automatic Geolograph Correlates Drilling Speed With Other Pertinent Data

DURING the past three years there has been in process of development a practice commonly known as "as drilling time correlation," and a recent innovation has made it possible to automatically record the speed of drilling on a time chart along with such pertinent information as round trips, circulating time, shut down time, and the like, important factors in correlating cuttings with the depths at which such different formations actually are encountered in rotary drilled holes.

Complete foot-by-foot drilling-time records are a graphic presentation of the speed with which formations can be drilled under given conditions, such as weight on the bit, condition of the hole and of the mud fluid, speed of rotation, and the pressure and speed at the pump. Formations of different hardnesses and of different porosities usually will show distinctly different penetration rates and, if drilling conditions are kept uniform, these variations in penetration rates may be applied to a number of practical and important uses.

Specific Applications

From the information thus obtained the geologist can pick the tops and bottoms of strategraphic

units more carefully, and he may therefrom find porous zones that otherwise might have been passed up. By correlating this information with that obtained from the study of formation cuttings, he may select casing seats more carefully, decide upon the manner of acidization, the location of shot positions, and determine the actual total depth. In corrective work he may recommend more intelligently depths to which wells should be plugged back, where packers should be set, where electric logging should be done, and where casing should be perforated. In some areas the method has been used in valuation work.

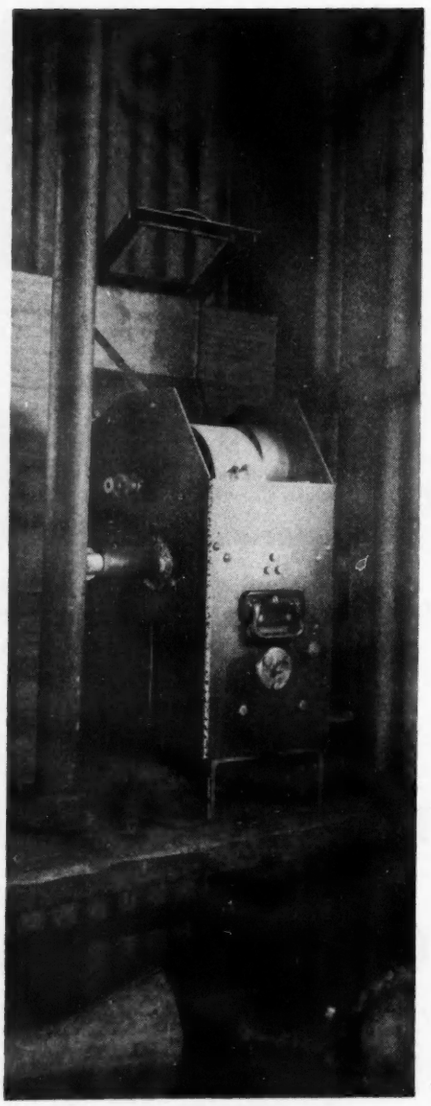
Normal Procedure

The normal procedure in such a study usually involves marking off with paint on the kelly joint the desired intervals in feet. This may be done in graduations of one foot, two feet, five feet, or up to 10 feet, but in most cases those doing this work are using one-foot intervals. The time is taken as each interval mark reaches the rotary table, and the amount of time required to drill the selected interval of hole is determined therefrom. In order to obtain a dependable record in this manner a large part of the time of one man usually is required to make observations and record the data.

Nichols' Instrument

Paul Nichols, geologist assigned to the engineering department of Indian Territory Illuminating Oil Company of Bartlesville, Oklahoma, has designed, and the company now has in use, an instrument which automatically records the drilling depth and rate and the drilling operations simultaneously in parallel columns on a chart which is turned by a clock. This machine eliminates a large part of the human element and, therefore, probably some of the errors that may be involved in the "striped kelly" method. It relieves one man for other duties. The instrument usually is placed in the geologist's "dog house" where it can be referred to constantly by the geologist on duty. When this set up is made the geologist operates the machine, makes all the necessary observations, and has this information for correlative purposes as he studies the cuttings. The machine can, however, be set up on the derrick floor is desired.

Of simple construction and, except for changing the charts and operation of the clutch when reaming, Nichols' instrument is entirely automatic in operation. It includes a sheave upon which have been placed several cams which operate the drilling rate stylus. A flexible line is attached to the goose-neck of the rotary swivel, taken over a sheave in the derrick, back to the derrick floor or to the geologist's



The "Geolograph" installation. Samples of the cuttings can be taken from the return ditch without the geologist's leaving his "dog house."

"dog house," where it passes around the sheave inside the machine and back into the derrick, where the free end is weighted and moves in a guide of tubing. Being kept taut at all times by this weight on the free end, the flexible line conveys the drilling motion, direction and rate to the machine. A clutch is provided to disengage the recording mechanism when the hole is being reamed or when any other operation that does not affect the drilling depth or rate is underway. It is unnecessary, however, to disengage the machine when circulating or making round trips or any operation which it is desired to include on the drilling operations curve.

What It Shows

The sheave inside the machine is turned by the flexible line as the rotary swivel moves up or down. The cams are so placed that for every foot of downward movement the stylus arm is contacted and a nearly horizontal mark made on the drilling rate curve. In contact with the outer rim of the inside sheave the designer has placed a magnet, the upper end of which is connected with a stylus or pen. In the normal drilling operation this stylus is recording a vertical line on the right side of the column. When the direction of motion of the sheave is reversed by raising the bit from bottom, the magnet, following the direction of rotation of the sheave, causes the stylus to move to the left of the column, where it registers until the motion is again reversed. Thus, the elapsed time for round trips, connections, repairs, circulating, etc., is shown in relation to time and depth.

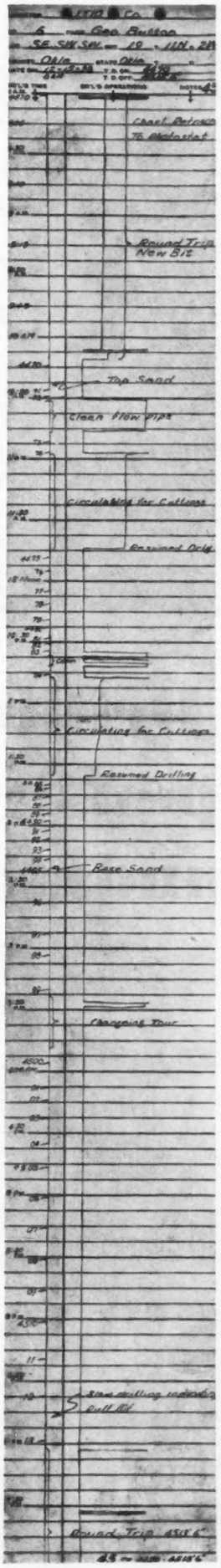
Figure 1 is a reproduction of a chart taken at an actual drilling operation. One of the outstanding features of the machine is the inclusion of a veedometer from which the operator can read directly the correct total depth at all times.

Taking a Reading

In Figure 1 the vertical line nearest the right hand side of the chart is the drilling operations column and the line nearest the left hand side is the drilling depth and speed column. This chart has been marked off for 7½ minute intervals, but can be read to a closer interval if desired. It will noted that in this particular case drilling ceased at about 8:00 A. M., when the total depth was 4470 feet. That the kelly was broken out at that time is shown by a horizontal offset in the drilling operations column. At 10:06 a round trip was completed and the pumps started. At 10:15 the new bit was on bottom and drilling was resumed. The first foot of hole required about 10½ minutes of drilling time and the second foot about three minutes. The geologist picked 4471 feet as the top of a sand, cuttings

FIGURE 1

Chart taken at an actual drilling operation, Indian Territory Illuminating Oil Company's George Button 6.



from which were not obtained at the surface until almost an hour later.

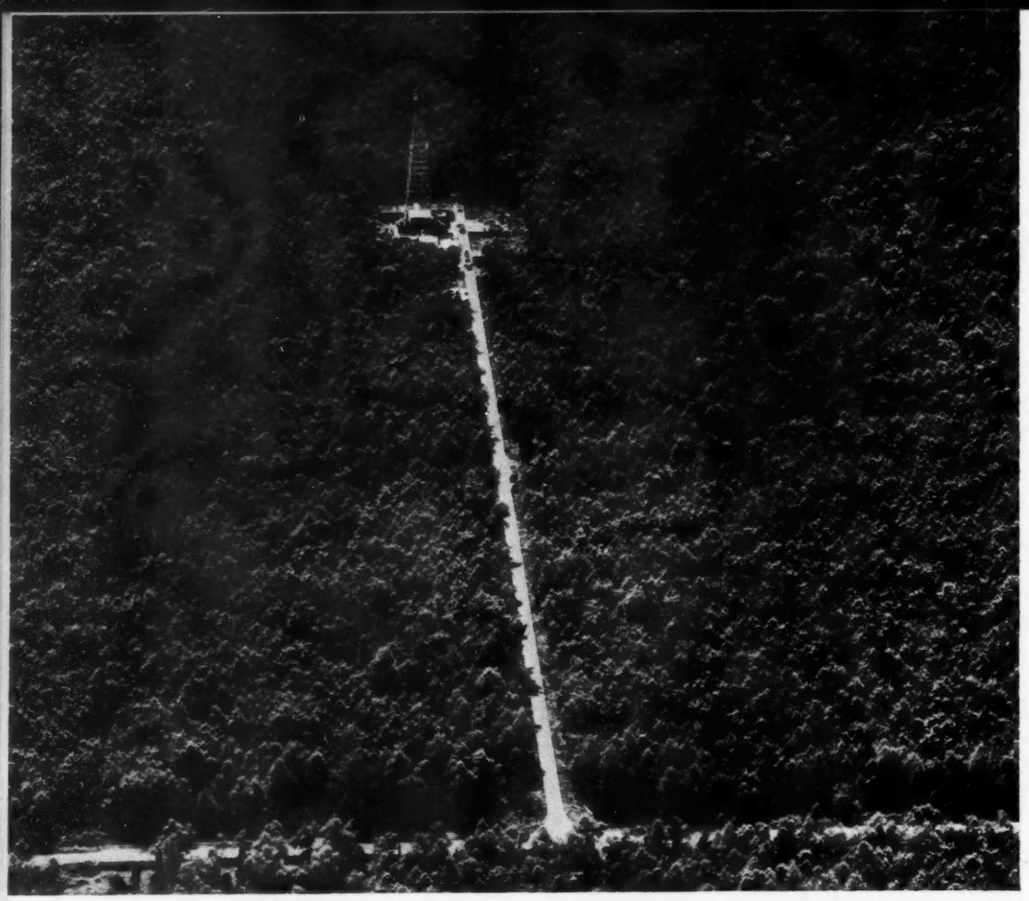
When both columns are in a vertical position and no short horizontal marks project from the drilling rate column, the swivel has not been moved up or down, and some operation other than drilling has been under way. These observations must be made by the operator of the machine and appropriate notations made on the chart. The drilling operations column shows the amount of time consumed in the operation.

Interpretation

At about 10:31 drilling ceased and the crew spent 15 minutes cleaning out the flow line. Another foot of hole was then drilled, and at 10:58 the driller raised the bit off bottom and started circulating for cuttings. This operation required about 45 minutes, and then drilling was resumed. In the interval between 4475 and 4483 feet, the drilling rate was fairly uniform, with the exception of from 4481 to 4482 feet, which probably was a streak of slightly greater porosity. At 12:36 P. M., a connection was made. At 4485 to 4495 feet the penetration rate was uniformly greater and the cuttings very probably showed a greater porosity than in the upper part of the sand. The geologist picked 4495 feet as the base of the sand.

It usually would be unnecessary to interpret the record in as much detail as is presented above. However, it is obvious that a great amount of detailed information can be obtained from the chart if desired. In cases where drilling contractors are given special pay for reaming, coring, circulating for cuttings, etc., these charts will eliminate the possibility of misunderstanding as to the amount of time expended in such operations. Upon these charts also can be kept a very complete record of bit performance.

The machine will not take a core, but it may indicate the proper time to start coring. It will not log electrically, but it may indicate porous strata or zones which should be electrically surveyed. It will not perforate the casing, but it may show the presence of sands or other porous media above the objective horizon that may later prove productive and require perforation of the casing. The geologist usually can keep this record without interference with his other work, so the information is in fact obtained at no cost other than the cost of the machine. Because of the simplicity of operation and the great degree of accuracy that is incorporated into the records, this machine should play a major part in the more recent attempts to interpret subsurface conditions dependably where the rotary drilling method is used. No claim is made by the designer that the machine is a cure-all or that it can take the place of anything that heretofore has been done, other than the "striped kelly" method. It does relieve the drilling crew of some of the demands upon its time, yet it encourages a greater alertness on the part of these men.



Aerial view of Sun Oil Company's discovery well in the Chacahoula field. The derrick was moved to one side and then to the other for drilling two additional wells by directional methods. This district is swampy and access is by a road built on piles. (Davis photograph).

Directional Drilling Prorates Cost of Expensive Derrick Foundation

By BRAD MILLS
Associate Editor

DIRECTIONAL drilling has been successfully applied to several swampy and submerged areas along the Louisiana Gulf Coast. The use of this development method has effected a considerable saving in location expenditure, since from three to nine wells may be drilled from a single pier combination, or "island."

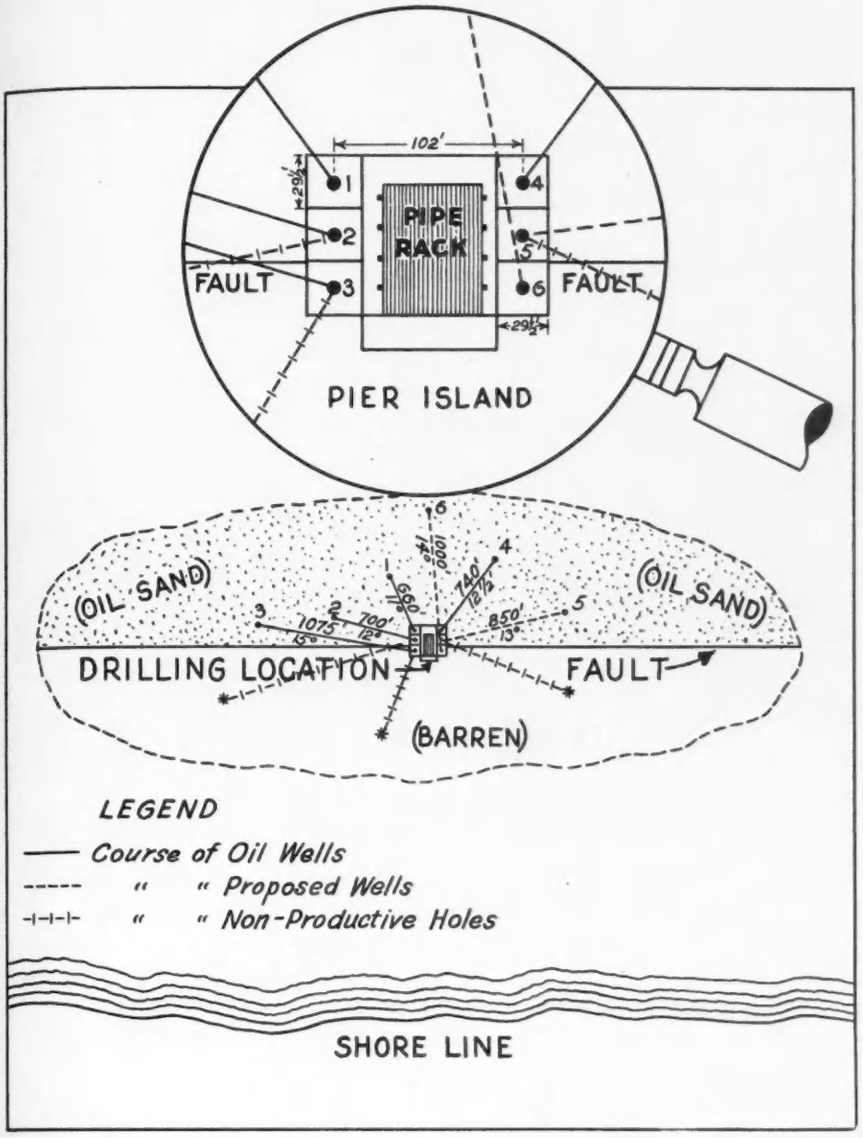
The pier arrangement usually is such that the derrick can be skidded a short distance, the slight shift in operations placing the wells from 24 to 34 feet apart at the surface. The grouping or "cluster" arrangement makes possible the use of one large pier assembly for several wells. In the swampy areas, one road serves the entire group of wells, while at water locations the "island" for four or six wells may be constructed at a much smaller cost than for four or six separate islands or pier assemblies located several hundred feet apart.

The skidding of a derrick only its base width permits the use of the "middle" or common pier foundations for two wells. In one swampy area the derrick was skidded about 35 feet, but middle or inside piling helped to support each derrick during drilling operations. In another field the derrick was skidded a derrick width, plus a few feet, to give an entirely new primary support for the second well. This was considered desirable because of the slight sinking of the pier assembly during the first drilling operation, but it did not affect the "community" aspect of the arrangement.

Regardless of the exact well arrangement at the surface, the principal objective has been to incorporate a tie-in or unity of construction for reducing foundation costs and to utilize limited transportation facilities.

Developments in one field indicate that it may not be best to design an elaborate pier or island assembly ahead of development. An unexpected turn in structural trend can develop to make drilling in a row of four or six wells more desirable than in rectangles of four, six or nine wells. The possibility of being slightly off structure with the first well also is a major consideration in any drilling plan.

Completion as "slant hole" or di-



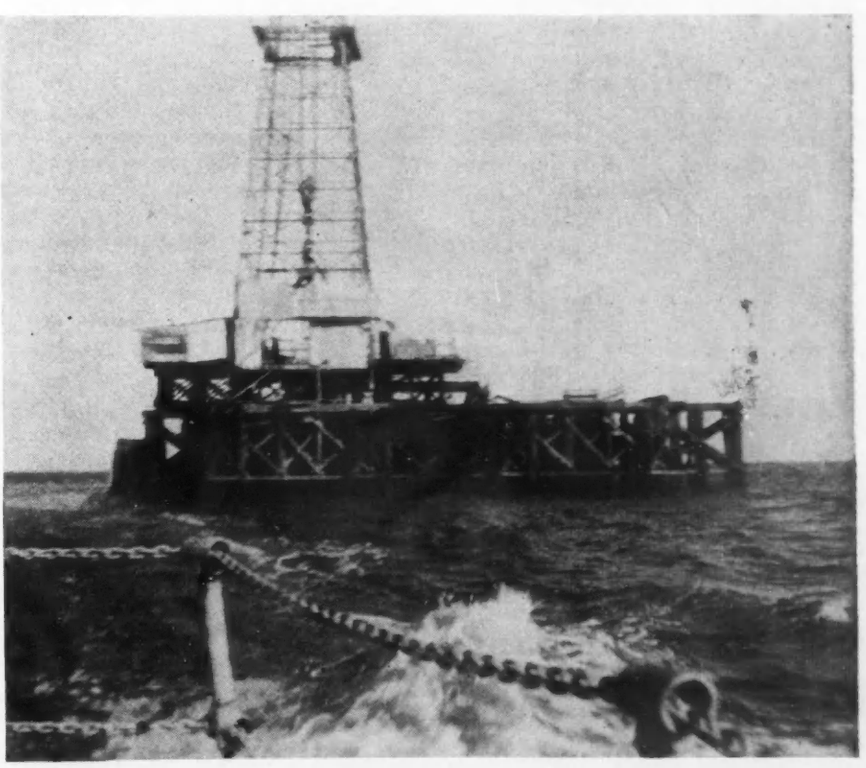
Plan drawing to show development of an oil structure more than a mile from shore. Six well locations are used at a pier island, and the wells are deviated or drifted by directional drilling for completion on the productive side of the structure. The drawing is partly theoretical and partly based on an actual directional drilling operation along the Louisiana coast. The horizontal drift and average degree of deviation are shown for each well.

rectional wells has not unfavorably affected the initial yield of the several wells brought in during the past year. The casing and completion programs have been carried out in the usual manner, and well performance in directional wells has equalled that from straight-hole completions in each group.

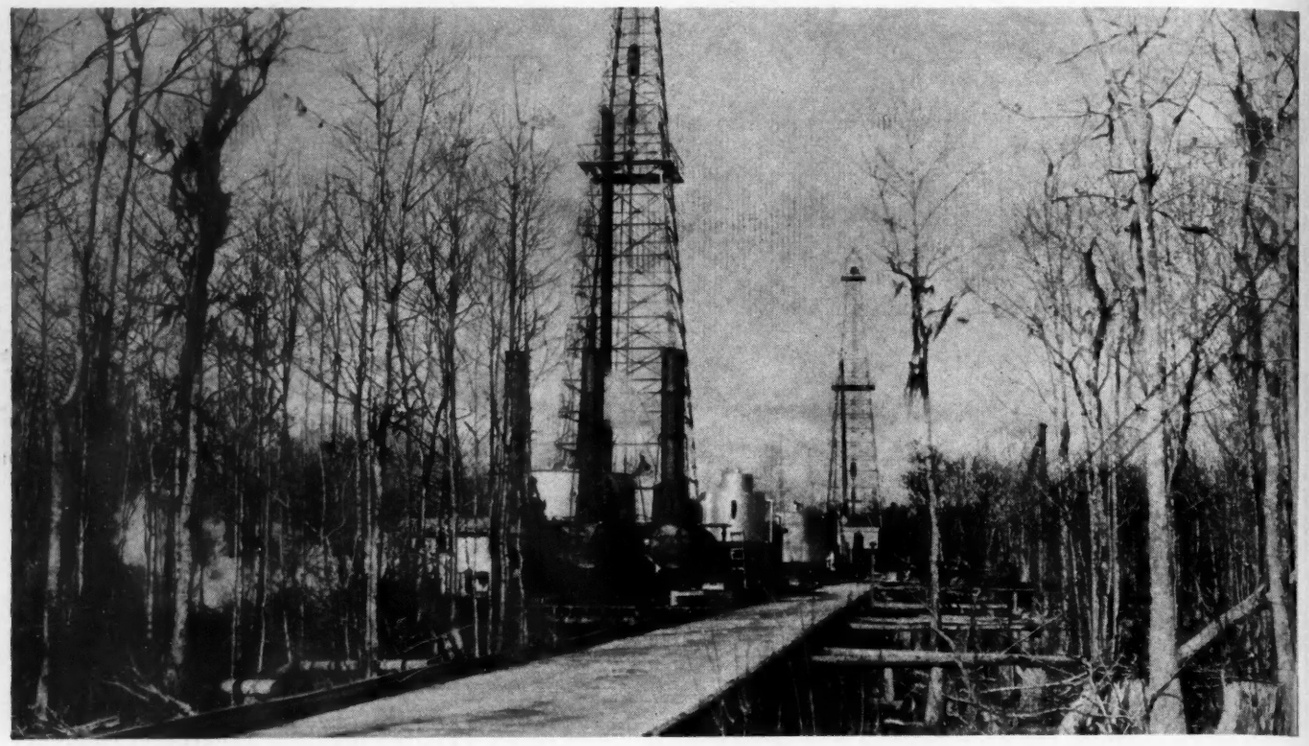
First Hole Straight Down

The first well usually is completed as a straight hole, and it has been the discovery well in each of two new South Louisiana fields now under development by directional drilling. Subsequent wells have been drilled from group arrangements, and have been deviated for completion at a desired point in the producing formation. Failure to develop production in a few wells has necessitated plugging back and redrilling in another direction.

In one open-gulf area the cost of building the pier for the first well was about $75,000. A pier island for drilling five additional wells was completed at a cost of around $150,000. Thus the cost of foundations for the cluster of six wells was only twice that of the first well. The low average cost for the six wells was effected by the common use of piles for two or more wells and construction of one large casing rack for all wells. This "island" construction was completed in the open gulf, where the cost of separate pier foundations would have



A view of three locations in the Creole, Louisiana, field. The derrick stands over the end location of a row of three, the two locations on the right being twice the width of the derrick. More than 500 piles form this drilling island and platforms for the auxiliary equipment. The water is about 15 feet deep. Four wells have been completed and two more will be drilled from the island.



A late picture of Sun Oil Company's operations at Chacahoula, Louisiana. Derrick in the background is drilling the third well of a group of three located 30 feet apart. Derrick in the foreground is the first location for what may be another group of directional wells, although it missed the first producing zone.

been prohibitive in about 14 feet of water.

In planning for pier construction, the number of wells for each group, depth and natural hazards at the surface are factors. A horizontal drift of 660 feet or more is not difficult to obtain in the average South Louisiana well, since production in the directional drilling areas is found below 5000 feet. The drift or deviation from vertical has ranged from 8 to 28 degrees, but the operators usually try to follow a "flat" deviation that will give them the necessary horizontal drift at bottom. A sharper deviation angle would place the full horizontal drift at a point above bottom, and would necessitate straightening the hole for continuation to the oil sand. Such a course in one well merely added an extra turn or "dog leg" to the hole. Full attainment of the horizontal drift above bottom should not be considered a fatal mistake, however. In the case of large leases, continuation of the horizontal drift well beyond the original objective has been practiced for establishing geological information. A drift of more than 1000 feet is practical in fields producing from 7000-foot levels. The necessity for a change in course has been met in one field, where three dry holes were converted into producers by plugging back and redrilling in another direction.

Drilling at Creole

Superior Oil Company and Pure Oil Company have pioneered directional drilling in open gulf waters along the Louisiana coast, their activity near Creole, Cameron Parish, having been the most extensive yet undertaken in the district. The original plan called for drilling nine wells from an artificial island only 90 feet square, but developments have forced a change in the pier arrangement. The first well was drilled on a geophysical prospect one mile off shore, in about 15 feet of water, and at a point apparently well on structure.

The spacing and drilling plans have been affected by faulting, and wells are bottomed as closely as 500 feet apart. A major fault line shut off one side of the structure from production, and deviation of the wells toward the producing side obviously was necessary. The original, uniform 20-acre spacing pattern was abandoned in favor of one that would make possible the completion of six producers on one side of the fault.

Several construction methods were considered for well locations in the 15 feet of open water, but the conventional creosoted wood piling type of structure appeared most satisfactory. The artificial island consists essentially of six well foundations, a large casing rack, and auxiliary foundations for the power plant, tanks, mud storage and fuel supply. The six well foundations are arranged in two rows of three, each row being exactly three times as long as a derrick width, or 88½ feet. The two rows of wells are 102 feet apart from center to center, being in parallel and with a 72½-foot casing rack in the center. Obviously the wells in each row are 29½ feet apart, the width of the derrick.

About 500 piles have been drilled in building the island. The 18-pound treated creosote piling used are 65 feet long, have 14- and 18-inch butts, and carry a 35-foot penetration. The casing racks and general platform levels are 12 feet above water, while the derrick floor levels are 21 feet above mean low water. The vital points of the island were built to withstand a 150-mile hurricane, and the major equipment items are designed with anchoring devices.

Redrilling Avoids Failures

Development at Creole has taken several interesting and unexpected turns. Five wells have been started from five locations, yet no final

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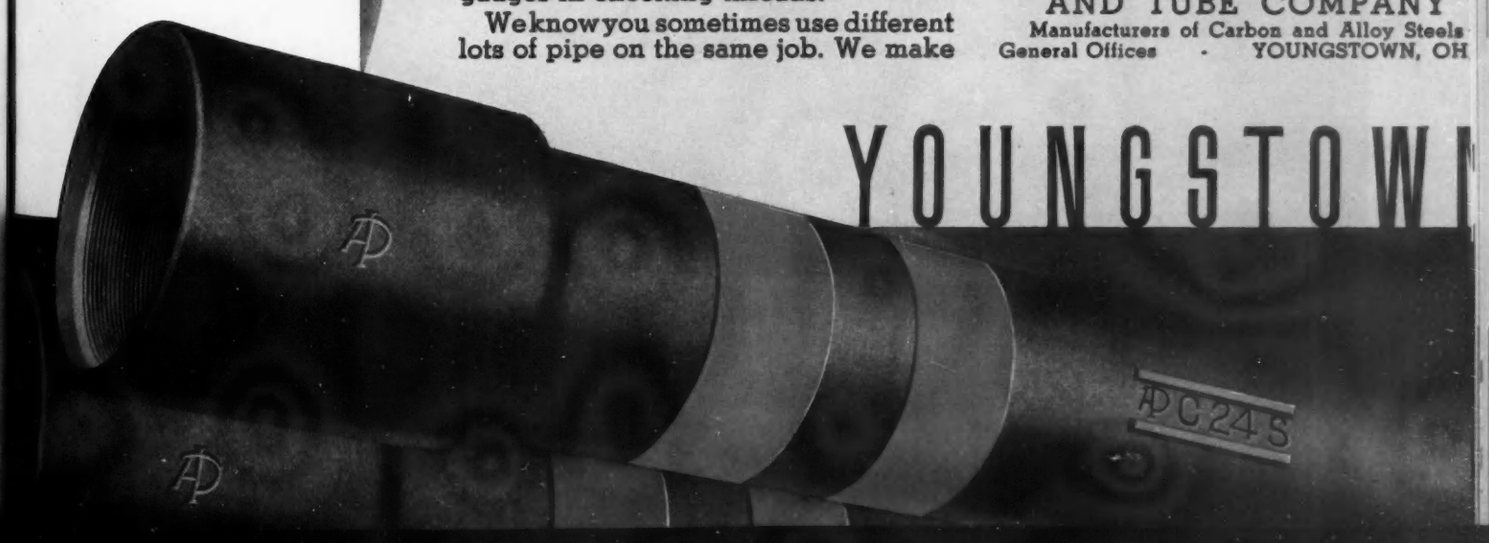


failures have been recorded. By plugging back and sidetracking in two of the first four wells, the producing formation has been tapped and oil wells completed. The fifth well, now being drilled, did not find oil at the expected level, but it probably will be completed as an oil well at another level, or in the 5100-foot zone after a plugging and redrilling operation.

Actually eight wells have been drilled from five locations, but the loss of the lower portion of three holes did not prevent backing up and redrilling by directional means to the productive part of the structure. Thus the record to date gives four successful completions out of five original efforts, with three dry holes below the original point of deviation ruled out by second efforts, and a fifth completion more than a possibility. Drilling from the sixth location will follow completion of the fifth well (actually the eighth). The discovery well was drilled as a straight hole.

A 17-inch hole is drilled to 290 feet, where 13⅜-inch casing is cemented. Size of the hole is reduced to 12½ inches and continued to about 960 feet where 9⅝-inch casing is cemented. An 8⅝-inch hole is continued to bottom, at about 5150 feet, and either a 7-inch or a 5½-inch casing string run to around 5100 feet. Several variations in practice have been necessary.

Deviation from vertical usually starts at about 1200 feet, a safe distance below the 9⅝-inch casing. The operators attempt to establish a uniform drift that will give them the necessary horizontal position at a point near bottom. A uniform or "flat" drift is not always practical, however, and one of the deep exploratory tests that originally missed the producing zone drifted about 1550 feet horizontally. This well showed a maximum drift of 28 degrees from vertical, and the average drift below the point of deflection was 21 degrees. This well was continued to a much greater depth than the producing wells.

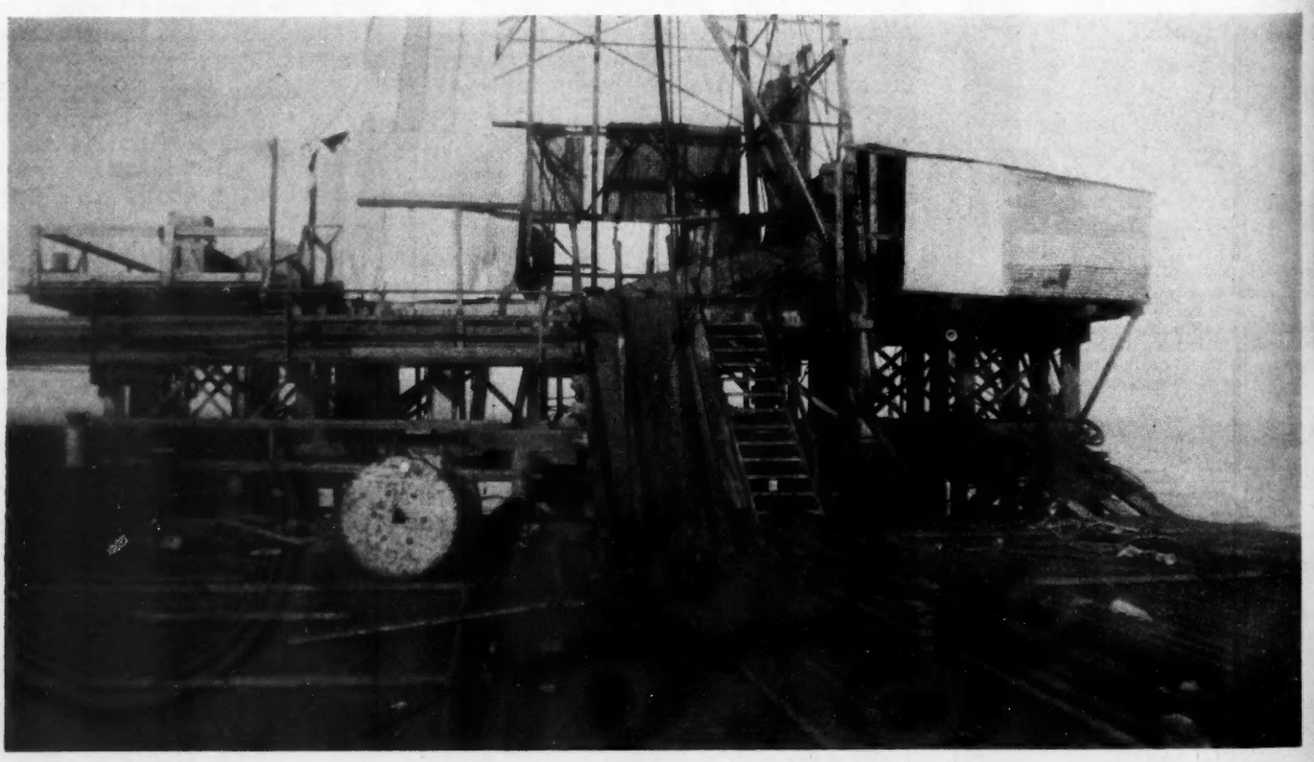
Another well drifted 1075 feet horizontally and showed an average deviation of 15 degrees from vertical. The drift or deflection is difficult or impossible to control when less than 5 or 6 degrees from vertical, while a deflection of 22½ degrees, or one fourth of a right angle is not too sharp when necessary. Under conditions prevailing at Creole, horizontal drifts of 400 to 1100 feet will meet requirements for drilling 6 wells at a common location. The holes that missed production were failures not because of poor directional drilling but because of the faulted condition of the structure.

Although the artificial island originally was designed for use with steam equipment, a large Diesel-electric outfit is used. The power plant occupies the space first allotted to the boilers. Drilling conditions are about average for the Louisiana Gulf Coast, and the elapsed drilling time varies from 26 to 30 days.

The large pier is located more than a mile from shore, but direct contact with land is maintained. A telephone line runs to the pier, via a lead cable. A 3-inch pipe line runs from the pier to the tank farm on shore, a distance of about three miles. The 1¼ miles of this line under water is buried about 9 inches below the bed of the gulf. Construction is of 3-inch upset tubing. Four 1000-barrel lease tanks are provided on the pier. The pier arrangement is such that normal lease operations may be carried on.

A feature of operations was the drilling of a 500-foot water well that furnishes fresh water for all requirements on the pier island.

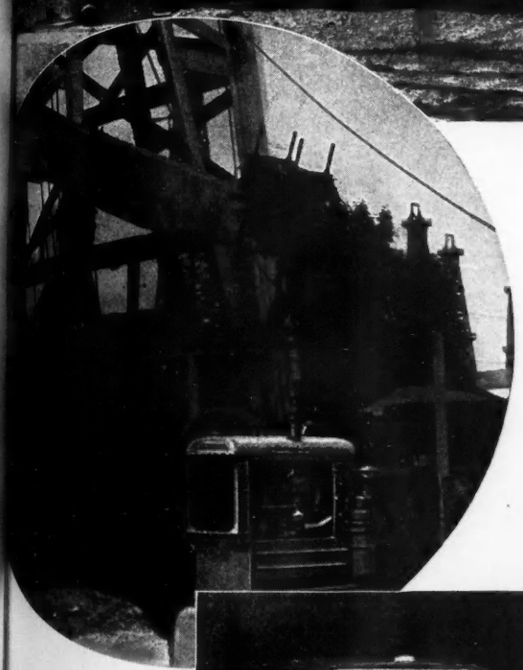
The pier is reached by boat out of Cameron, a distance of about 12 miles. Plans for developing the field beyond the present six-well arrangement have not been announced. The structure has not proved to be a uniform producer, and this fact, coupled with the expensive and hazardous nature of developments, probably will retard

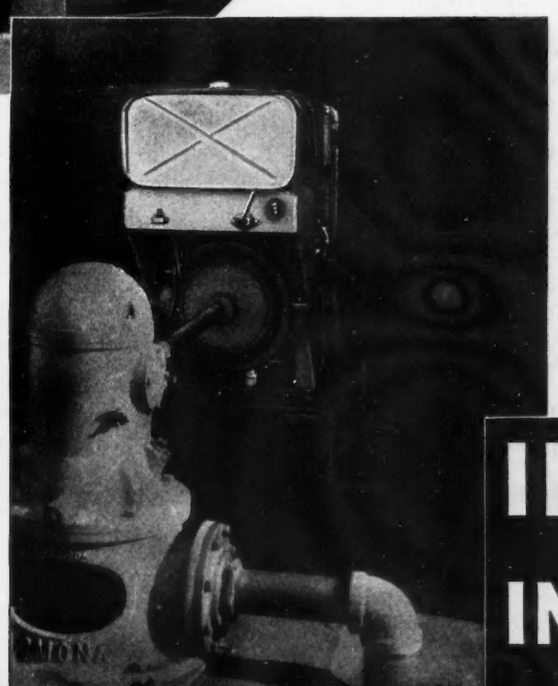


An "end" location of a row of three wells drilled on a pier island in the Creole field. The casing rack shown serves six locations, being in the middle of two rows of wells.

CUTTING POWER COSTS IN THE OIL FIELDS

International Power Units are powering the pumps on leases all through the East Texas field. This Model P-30 is one of several International Engines used by one of the important operators in this field.





Above: An International Power Unit pumping 24 hours a day from a depth of 5,100 feet for the Rico Oil & Gas Co., in Long Beach.

Right: Water for Weir Springs, N. M., is pumped from this location a mile away by 4 International Engines, one of which is shown. The well is 80 feet deep. These engines deliver a full 4-inch stream, through 4-inch pipe, at the rate of 400 gallons a minute, 24 hours a day.

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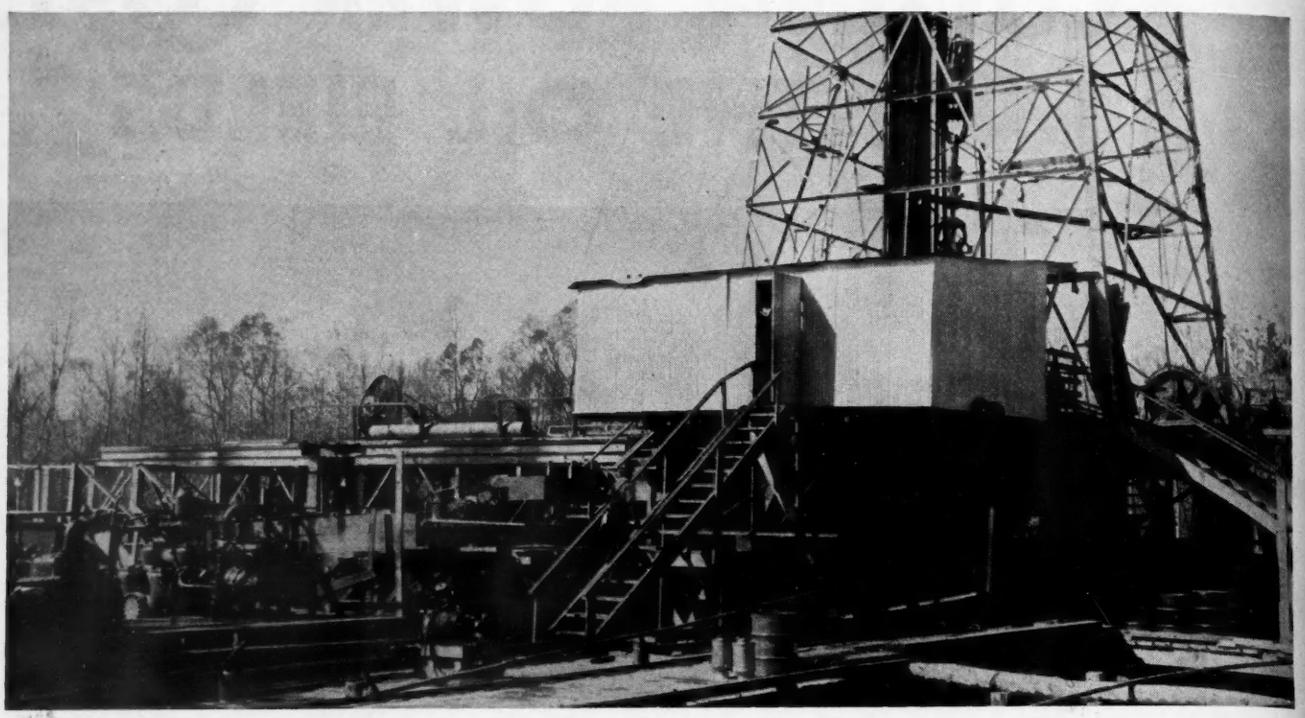

Close-up of a series of three wells in the new Chacahoula field. Close observation will show two completed wells in the background, the derrick being over the third attempt, not yet completed. The middle well was drilled first, the one in the extreme background second, and the nearest one (with derrick) third. The first well was drilled as a straight hole, the second and third as directional efforts.

operations that otherwise would be successful.

Drilling in Swamp

Sun Oil Company is employing directional drilling methods in the development of the Chacahoula field, La Fourche Parish, the swampy nature of the area making conventional well locations very expensive. Three wells have been drilled close together to capitalize on the "community" aspect of the pier arrangement. Location is in a large swamp, and expensive pier foundations are necessary for roads, derricks and equipment of every type. The company was forced to build a road on piles from a gravel county highway to the first well location, a distance of a fourth mile, and piles are used as supports for all equipment. The swamp is a favorite muskrat and mink area, and the heavily wooded nature of the ground belies its appearance as one that might be passable during certain seasons. The entire region is covered with a thick layer of mud and muck that offers little support for the conventional foundation.

The first well was drilled as a straight hole on a wood piling foundation. The derrick was skidded a derrick width, plus a few feet, for drilling the second well as a directional hole. The third well, now being drilled, is located slightly more than a derrick width from the first producer and in line with the first two completed. Thus it was necessary to skid the derrick across the first location, in moving from the second to the third location in the series. The three wells are located in an arrangement that permitted use of the same auxiliary foundations and one roadway, but various additions have been made from time to time.

A fourth well, started one location away from the group of three locations, was drilled as a straight hole but missed production in the regular producing formation. The company has not decided whether to make this well one of a close group that will be completed principally as directional producers, or to make other conventional locations in the swamp.

Drilling in the first and second directional wells was not completed with the ease anticipated. A difficult fishing job in the first deviated hole was overcome and the well completed as an oil producer. The second directional test developed a fishing job and it was necessary to plug back and redrill a second slant hole from about 3900 feet. This well has not yet been completed, but it probably will be finished as a directional producer in the regular zone.

A 19¾-inch hole is drilled to around 130 feet, where 16-inch surface casing is cemented. A 14¼-inch hole is drilled to 1890 feet, and 10¾-inch casing cemented at this point. A 9⅞-inch hole is drilled from the last casing shoe to bottom at about 7275 feet.

In directionally drilled wells, the deflecting tool is run at about 1990 feet, or 100 feet below the bottom of the last casing. Since the producing zone is encountered below 7000 feet, the horizontal drift of about 660 feet is not difficult to obtain with a gentle angle of deviation from vertical. The average angle has been about 8 degrees from vertical in the first two wells attempted as directional tests. Seven-inch oil strings are cemented at about 7245 feet.

Drilling equipment used is of heavy standard rotary type. Representative items include 136-foot derricks; three 125-horsepower boilers per well; 18- and 20-inch steam slush pumps; 12 x 12 and 14 x 14 twin steam drilling engines; two 250-barrel steel mud tanks and one 1000-barrel reserve tank on each well; 27-inch rotary; 10,000-foot type draw works, and 4½-inch drill pipe below 2000 feet.

Oil from the two producing wells flows nine miles through a 6-inch pipe line to Gibson, under regulator pressure, and is not gauged in the field. Gas is used for fuel in the field.

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- Catheads easily removed from tapered ends of line shaft,
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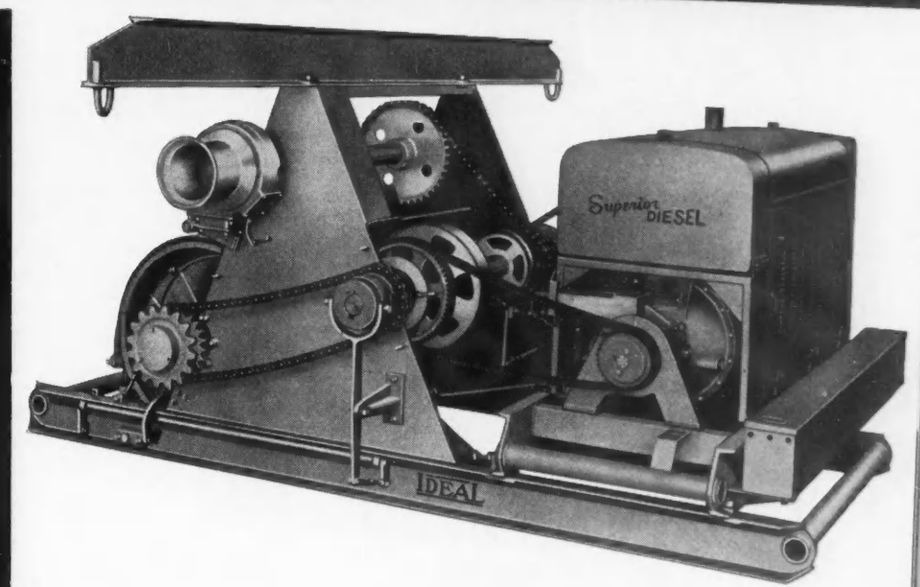

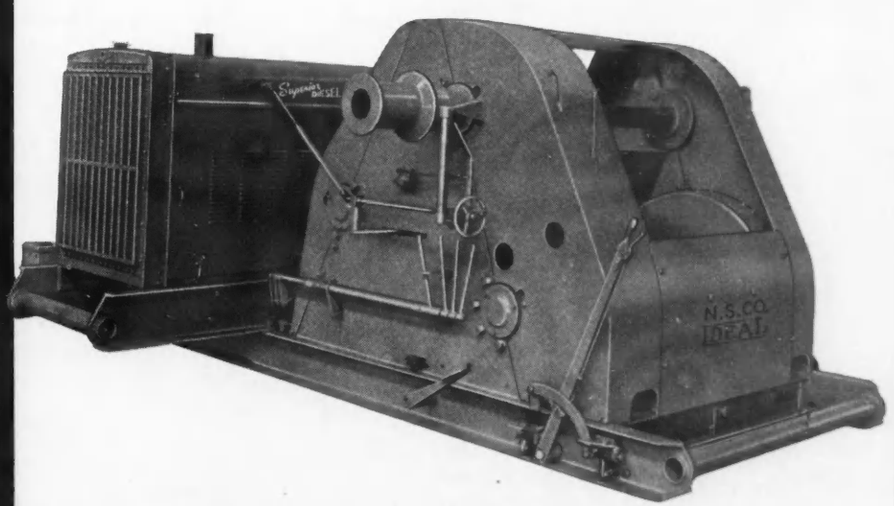

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Gravel Packing 6400-Foot Southern Louisiana Flowing Wells

By FRED N. BRASHER
General Superintendent, William Helis Interests

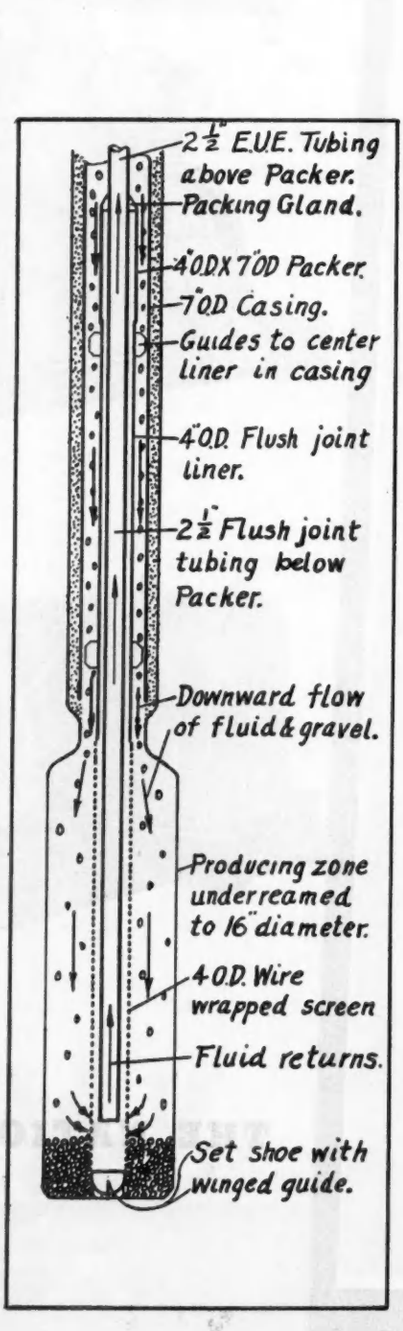
HIGHLY successful results are being obtained from gravel packing oil wells in the University field near Baton Rouge, Louisiana. In this field, we are producing from the Miocene, an extremely fine and unconsolidated sand. Considerable difficulty was experienced in maintaining profitable production in this formation and it was decided that gravel packing would be the solution.

At this writing, we have gravel packed three new completions and one work-over, which we consider an excellent test of this method of well completion. While the primary object for gravel packing was to control the fine sand, it is interesting to note that the gravel packed wells produce considerably more oil than the wells not gravelled.

We now have eight producing wells in the University field. All are producing from very fine sand and from approximately the same depths.

Our first four wells were completed the conventional way, and the total initial production—immediately after their final completion—was approximately 1100 barrels per day. However, the total production of the above four wells per day has declined gradually until it is now approximately 700 barrels per day.

Our other four wells are gravel packed. They are now producing approximately 1430 barrels per day


2½" E.U.E. Tubing above Packer.
Packing Gland.
4"O.D.X 7"O.D Packer.
7"O.D Casing.
Guides to center liner in casing
4"O.D. Flush joint liner.
2½" Flush joint tubing below Packer.
Downward flow of fluid & gravel.
Producing zone underreamed to 16" diameter.
4"O.D. Wire wrapped screen
Fluid returns.
Set shoe with winged guide.

Drawing shows gravel being placed around screen (not to scale).

of clean pipe line oil, free of sand and silt.

One of our present four gravel packed wells was completed originally in the conventional way. Recently we pulled screen and liner on this well, underreamed the formation, packed gravel around the new screen and liner, and production increased from 112 barrels per day to 290 barrels per day.

The gravel packing of these wells was done by placing the gravel with a patented hydraulic method. After the 7-inch O.D. casing had been set and cemented the conventional way, the productive formation was underreamed to 16 inches diameter. Then screen, liner and packer were made up and lowered into the casing on a thrible of tubing, through the blowout preventer, after which the blowout preventer was removed and the Christmas tree, with a tubing stripper in top, was installed. Screen, liner, etc., were then lowered to bottom. The gravel equipment was connected to one of the side outlets in the casing. Due to the high gas pressure, the mud pump was connected to the other side outlet, thereby maintaining control of the well during the entire gravelling operation.

Gravelling equipment consisted of high-pressure drums, pump, control valves, etc., mounted on a truck. The gravel was delivered to the job in sacks, washed and screened to proper size and uniformity. It was measured as placed in the drums or hoppers on the rear of the truck, and was mixed with water, then circulated and deposited by reverse circulation in

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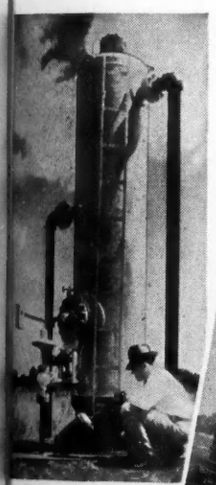

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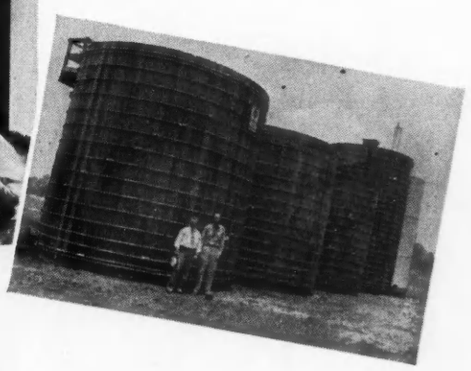

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the annular space between the screen and the wall of the under-reamed hole.

As time and space do not permit, I will not attempt to describe in detail each well as gravelled but will mention the procedure in general. The settings in all the wells were practically the same and each consisted of:

1—4" OD tubing type set shoe with winged guide;
15'—4" OD brass wire screen .018 gauge;
175'—4" OD 11.60-pound seamless blank liner;
1—4" OD x 7" OD tubing set gravel packer.

All the above items had flush joint threads, providing an even annular space between the liner and casing to allow free passage for the gravel while being placed. Each joint was equipped with three brass guides to center the screen-liner in the casing. Two and seven eighths inch OD 6.40-pound seamless tubing with flush joint threads was used as wash pipe, from the set shoe to the packer. The "letting-in pin" was placed on the bottom of this tubing and made up in the brass screw-down valve in the set shoe. The collapsing tool for setting the packer was placed on the tubing so it would be in the bottom of the packer while gravelling. Two and seven eighths inch OD seamless upset tubing was used from the packer to the surface of the ground.

Normal circulation was maintained until the mud was equalized thoroughly. While screen-liner were being lowered, regular circulation was established down through the tubing until the liner was on bottom. The well then was ready for gravelling.

Circulation was reversed through the casing and the pump on the gravelling truck made 75 strokes with water, at 250 pounds pressure. This was followed immediately with gravel. Water was used to wash the gravel in. We had estimated the well would take 40 cubic feet of gravel. The first five cubic feet were pumped in three minutes with 111 strokes of the pump. The second five cubic feet in 85 strokes, and so on, until 40 cubic feet had been pumped, in a total of 765 strokes and the pressure built up to 800 pounds.

At this point, we switched from gravel to mud, and continued to pump mud until the gravel was on bottom and the pressure had built up to 1475 pounds. About 30 feet below the packer, made up in the 4-inch OD liner, was about 2 feet of wire-wrapped screen called a "tell tale" screen. As the gravel was being pumped in, the pressure gradually increased and when the gravel packed around and above this "tell tale" screen, the pressure increased several hundred pounds, indicating that the gravel was in place with a reserve amount up in the casing.

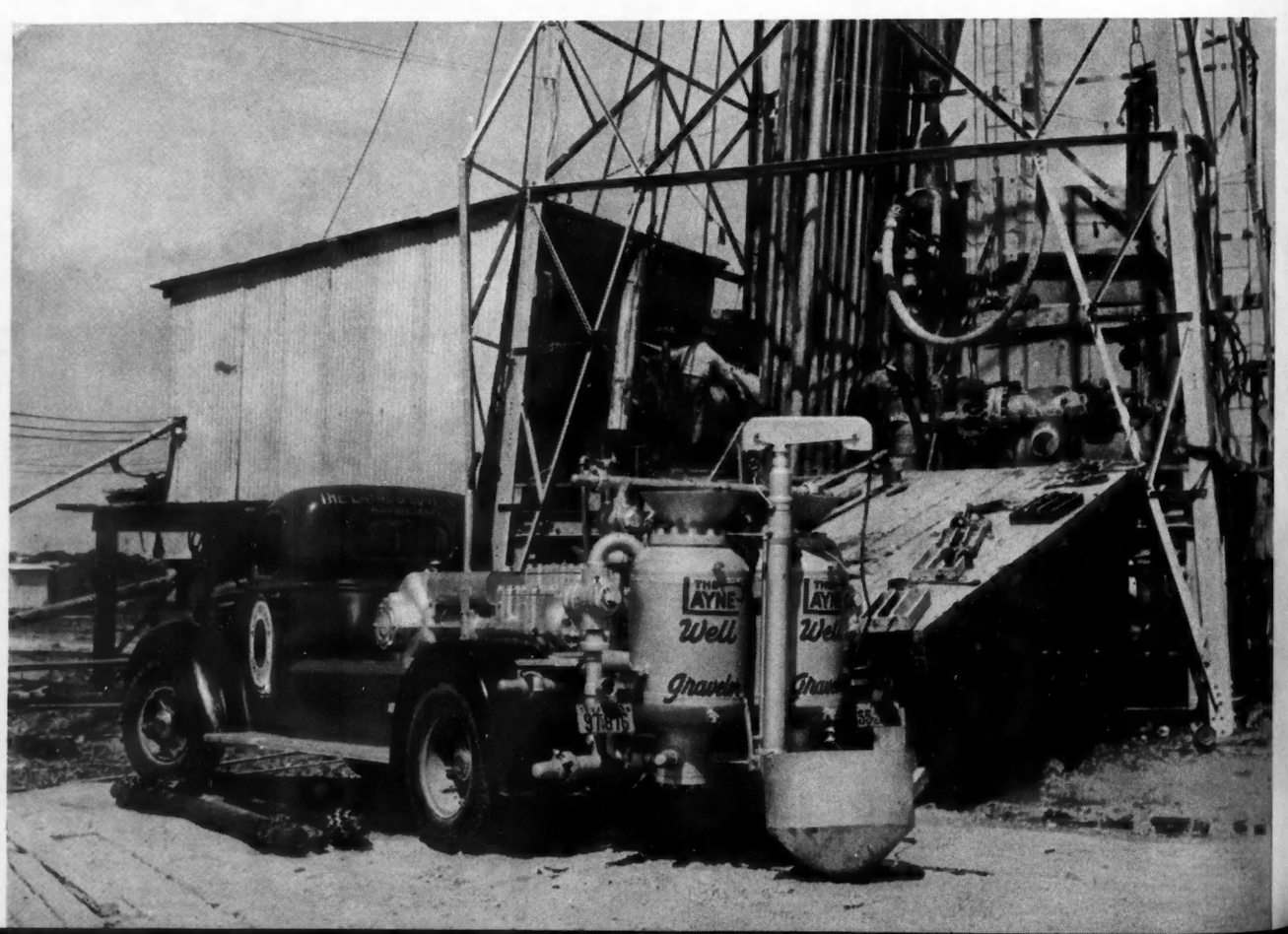
The pump on the gravelling truck was equipped with a stroke counter to enable the operator to determine the volume of fluid being pumped into the casing. This gave the operator the approximate time at which the pressure would increase. Knowing that the gravel was on bottom, the tubing was rotated to the right sufficient turns to close the valve and be released from the set shoe. Then the tubing was picked up and the packer set in the customary manner.

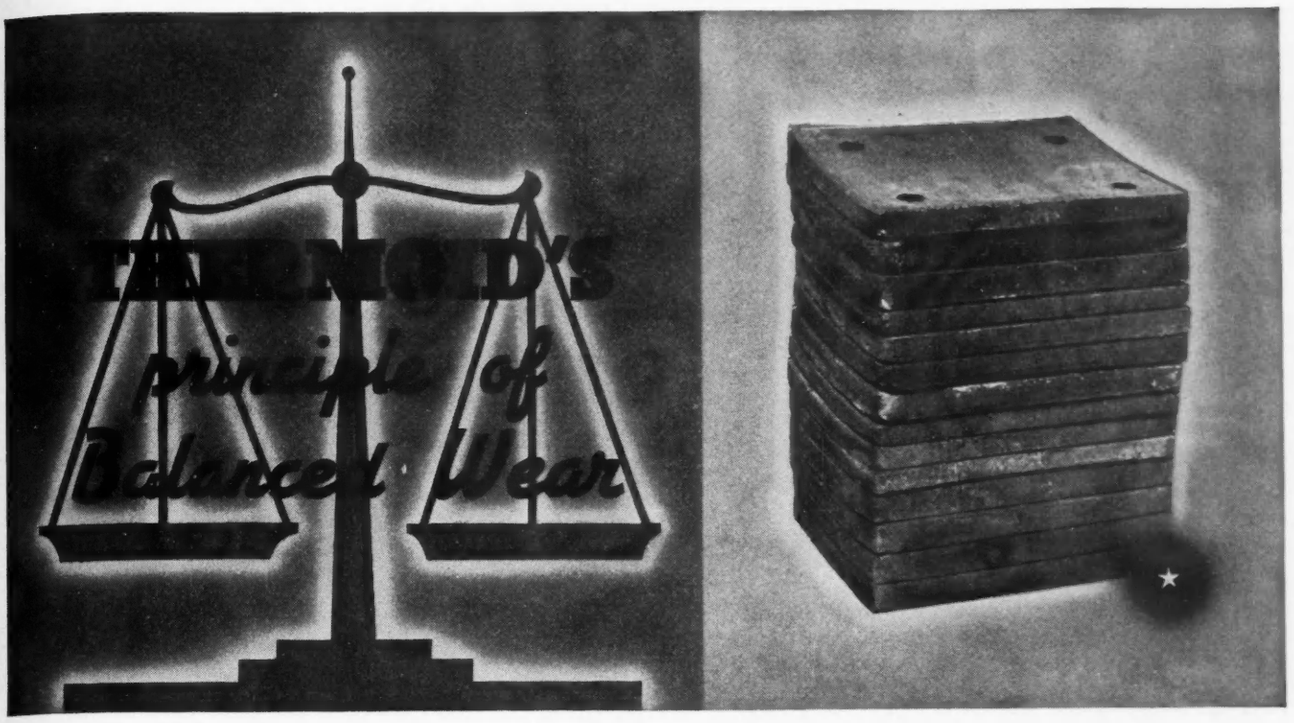
After the packer was set, the tubing was picked up again to bring the collapsing tool out of the packer and break the seal at the top of the packer. Normal circulation was restored to bring to the surface any surplus gravel that might have been above the packer.

Next, the well was washed with water and completed in the usual way.

The valuable results obtained from our four gravel packed wells lead me to believe that this method will be found an excellent one for completion of wells in fine, unconsolidated sands.

Scene during gravel packing operations in the University field of Louisiana.





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In making engineering recommendations on such installations, Thermoid invariably specifies first, the use of long-lived Thermo-blocks on the high pressure end of the band to resist a fast rate of wear . . . and second, Thermoid BX Heavy Duty Blocks (which have high holding power) on the balance of the band to equalize the wear and to improve stopping power. Such recommendations increase the material's performance and effectiveness, in addition to cutting down costs on installations.

Study the performance records of Thermoid Products and Thermoid engineering service in any oil field. See for yourself what they mean in actual savings.

★ DRILLED AND CORED 3 DEEP WELLS AND BLOCKS NOT YET 50% WORN OUT

The blocks pictured above were removed for study in field checking Thermoid's principle of balanced wear. Blocks consist of Thermo-blocks used on the high pressure end of the band (shown at bottom of pile) . . . Thermoid BX Heavy Duty Blocks on the rest of the band locations. Most people agree that coring a deep well is equivalent to drilling two such wells. Study the footage tabulations and notice how evenly worn—how little worn the brake blocks are. There are thousands more feet of drilling and coring in every one.

FOOTAGE TABULATION

WELL	DEPTH
Well No. 1	8200 ft.
Well No. 2	8200 ft.
Well No. 3	9200 ft.
Well No. 4 (When blocks removed)	1200 ft.
	26,800

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Horsepower Ratings Tables For Leather Belting

By L. H. SKOUGOR
Research Engineer, American Leather Belting Association

THE long and deep felt need for belt ratings, by some universally recognized authority for the leather belt capacities, has recently been met by the American Leather Belting Association in the publishing of its horsepower rating tables.

In the past the user and purchaser of leather belting has been left entirely on his own in designing belting for his individual applications, and few millmen have had the time and facilities to segregate, from the numerous publications over the past decade, what can be considered a reliable and yet economical basis for leather belt rating.

The existant publications in many instances were at some disagreement of what constituted good belting practice, and theories set forth in older publications have since, in many cases, been revised and disproved through practical application.

These new tables now make it possible for the designer and purchaser to set up his own specifications rather than segregate them from a number of recommendations, and choose one without having any other basis to rely upon than one of many individuals who might be competitively involved.

The American Leather Belting Association tables are based on the performance of modern and up-to-date belting and are not based on one particular authority's theory, but are a correlation of scientifically measured tests and field data.

Table 1 lists horsepower transmission capacities for belts one inch in width at varying speed with the same given large size pulley throughout the tests. The tests were run at Cornell University by Ralph Jones on the most up-to-date and modern equipment available in the country, and all variables were carefully measured rather than involving any theoretical shortcuts and computations. It was a surprising thing that many of the existant formulas and theories concerning these variables were found to be inaccurate in

TABLE 1

Horse Power per Inch of Width

		SINGLE PLY		DOUBLE PLY			TRIPLE PLY	
		*11/64"	*13/64"	*18/64"	*20/64"	*23/64"	*30/64"	*34/64"
Belt Speed, Feet per Minute		Medium	Heavy	Light	Medium	Heavy	Medium	Heavy
600		1.1	1.2	1.5	1.8	2.2	2.5	2.8
800		1.4	1.7	2.0	2.4	2.9	3.3	3.6
1000		1.8	2.1	2.6	3.1	3.6	4.1	4.5
1200		2.1	2.5	3.1	3.7	4.3	4.9	5.4
1400		2.5	2.9	3.5	4.3	4.9	5.7	6.3
1600		2.8	3.3	4.0	4.9	5.6	6.5	7.1
1800		3.2	3.7	4.5	5.4	6.2	7.3	8.0
2000		3.5	4.1	4.9	6.0	6.9	8.1	8.9
2200		3.9	4.5	5.4	6.6	7.6	8.8	9.7
2400		4.2	4.9	5.9	7.1	8.2	9.5	10.4
2600		4.5	5.3	6.3	7.7	8.9	10.3	11.0
2800		4.9	5.6	6.8	8.2	9.5	11.0	12.1
3000		5.2	5.9	7.2	8.7	10.0	11.6	12.8
3200		5.4	6.3	7.6	9.2	10.6	12.3	13.5
Minimum Pulley Diameters	Belts Under 8" Wide	3"	5"	6"	8"	12"	20"	24"
	Belts 8" and Over Wide	5"	7"	8"	10"	14"	24"	30"
		These are the minimum allowable pulleys for the above thickness belts.						

		SINGLE PLY		DOUBLE PLY			TRIPLE PLY	
		*11/64"	*13/64"	*18/64"	*20/64"	*23/64"	*30/64"	*34/64"
Belt Speed, Feet per Minute		Medium	Heavy	Light	Medium	Heavy	Medium	Heavy
3400		5.7	6.6	7.9	9.7	11.2	12.9	14.2
3600		5.9	6.9	8.3	10.1	11.7	13.4	14.8
3800		6.2	7.1	8.7	10.5	12.2	14.0	15.4
4000		6.4	7.4	9.0	10.9	12.6	14.5	16.0
4200		6.7	7.7	9.3	11.3	13.0	15.0	16.5
4400		6.9	7.9	9.6	11.7	13.4	15.4	16.9
4600		7.1	8.1	9.8	12.0	13.8	15.8	17.4
4800		7.2	8.3	10.1	12.3	14.1	16.2	17.8
5000		7.4	8.4	10.3	12.5	14.3	16.5	18.2
5200		7.5	8.6	10.5	12.8	14.6	16.8	18.5
5400		7.6	8.7	10.6	12.9	14.8	17.1	18.8
5600		7.7	8.8	10.8	13.1	15.0	17.3	19.0
5800		7.7	8.9	10.9	13.2	15.1	17.5	19.2
6000		7.8	8.9	10.9	13.2	15.2	17.6	19.3
Minimum Pulley Diameters	Belts Under 8" Wide	3"	5"	6"	8"	12"	20"	24"
	Belts 8" and Over Wide	5"	7"	8"	10"	14"	24"	30"
		These are the minimum allowable pulleys for the above thickness belts.						

* See Table 4.

For belt speeds over 6000 feet per minute consult a leather belting manufacturer.

...in the shortest possible time."

SUPERHEATED STEAM GENERATORS"

"We can frankly say they made the best steam plant we have ever seen or used."

If you want to know why drillers are enthusiastic about the new "Oilwell" Portable Superheated Steam Generator, read this letter from Haynes B. Ownby Drilling Co.

HAYNES B. OWNBY DRILLING CO., INC.
705 GULF STATES BUILDING
DALLAS, TEXAS

December 28, 1938.

Oil Well Supply Company,
Dallas, Texas

Gentlemen:

It isn't often that we get enthusiastic about any piece of oil field machinery, as there is so much good equipment available today more economical in performance than the machinery built when we started drilling wells back in 1927.

In developing our recent drilling program for the Fairbanks Field, Harris County, Texas, a careful examination was made of the rig we intended to use, as we wanted to drill nine 7,000 foot wells in the shortest possible time. Our boilers seemed inadequate so we decided to buy two of your new Steam Generators. Frankly, your enthusiastic sales talk on the "Oilwell" Portable Superheated Steam Generator, and what it had done elsewhere, had caused us to give it considerable thought. We had no idea, however, that two of these generators would do the job they did for us at Fairbanks.

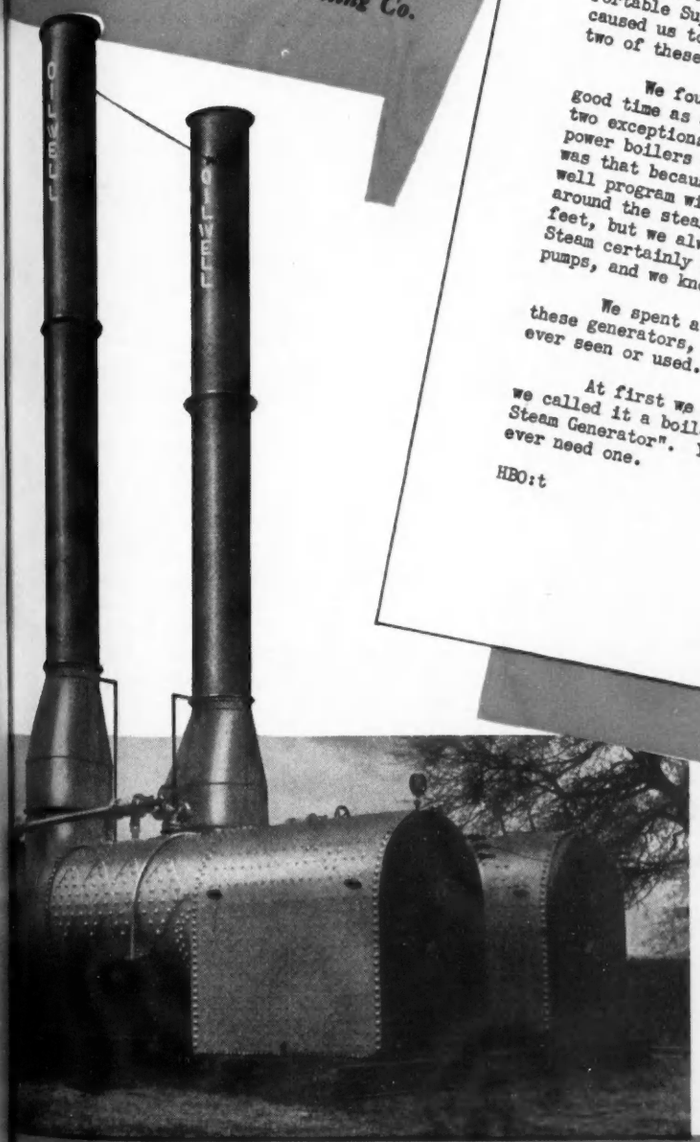
We found that our rig using two Superheated Steam Generators made as good time as any of the twenty other rigs in the Fairbanks Field. With only two exceptions, all of the other rigs were equipped with three 125 horsepower boilers of conventional design. The feature that appealed to us most was that because of the superheated steam we could complete the entire nine-well program with only three settings of the generators. We drilled all around the steam plant, with uninsulated steam lines extending as far as 400 feet, but we always had good dry steam and plenty of pressure. Superheated Steam certainly does give snappier action on the hoisting engine and slush pumps, and we know this speeds up drilling time.

We spent a lot of time at the steam plant watching the operation of these generators, and can frankly say they made the best steam plant we have ever seen or used.

At first we considered your new product just an improved boiler, and we called it a boiler. Now we really know why you call it a "Superheated Steam Generator". You can count on us for a strong recommendation if you ever need one.

HBO:t

Yours very truly,
HAYNES B. OWNBY DRILLING COMPANY
By Haynes B. Ownby
President



● AT LEFT

BATTERY of two "Oilwell" Superheated Steam Generators used by Haynes B. Ownby Drilling Co. Inc., which made as good time as other rigs using three conventional type boilers.

OIL WELL SUPPLY COMPANY

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"OILWELL"

TABLE 2

Correction Factor for Center Distance and Small Pulley Diameter

Diameter Small Pulley, Inches	CENTER DISTANCE IN FEET															
	Up to 4′		6′		8′		10′		12′		15′		20′		25′ and Over	
	TIGHT SIDE		TIGHT SIDE		TIGHT SIDE		TIGHT SIDE		TIGHT SIDE		TIGHT SIDE		TIGHT SIDE		TIGHT SIDE	
	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below
3″	.45	.45	.46	.47	.47	.48	.47	.49	.48	.50	.49	.52	.48	.54	.48	.55
4″	.53	.53	.54	.55	.55	.57	.56	.59	.57	.61	.58	.63	.59	.65	.59	.66
5″	.59	.59	.60	.62	.62	.64	.63	.66	.63	.68	.65	.70	.66	.72	.66	.74
6″	.62	.62	.63	.65	.65	.68	.66	.70	.67	.72	.68	.74	.69	.76	.70	.78
8″	.66	.66	.67	.69	.69	.72	.70	.74	.71	.76	.72	.78	.73	.80	.74	.82
10″	.68	.68	.70	.71	.71	.74	.73	.77	.73	.79	.75	.81	.76	.83	.77	.85
12″	.70	.70	.72	.74	.73	.77	.75	.79	.76	.81	.77	.83	.78	.86	.79	.88
15″	.73	.73	.74	.76	.76	.79	.77	.82	.78	.84	.80	.86	.81	.89	.82	.91
18″	.75	.75	.76	.78	.78	.81	.79	.84	.80	.86	.82	.89	.83	.91	.84	.93
24″	.77	.77	.79	.81	.81	.84	.82	.87	.83	.89	.85	.92	.86	.94	.87	.96
30″	.79	.79	.81	.82	.82	.86	.84	.89	.85	.91	.87	.94	.88	.96	.89	.98
36″	.80	.80	.82	.84	.83	.87	.85	.90	.86	.92	.88	.95	.89	.98	.90	1.00

Consider gravity idler and pivoted motor drives with tight side of the belt next to the pivot point as having 25 foot centers.
For pivot base drives where tight side of the belt is away from the pivot point, do not use these tables but consult a Leather Belting manufacturer.

checking with practical measurement. The figures in this table do not represent peak load ratings, but are based on proper tensions and factors of safety, so that when corrected through the factors in Tables 2 and 3, a properly designed drive will result.

It will be noted that the horsepower transmitted in inch of width increases with the speed of the belt.

With the work in Table 1 completed, it was necessary to establish a factor to compensate for the variables introduced, such as changing the effective area. These same tests were therefore run with varying pulley diameters and center to center distances resulting in the correction factors as shown in Table 2. These tests were in the same manner run through a practical and yet scientific series of measurement rather than using any theoretical formulas or short cuts. It will be noted that when gravity idlers and pivoted motor bases are used it was found that the factor for center line distances of 25 feet and over can be substituted for the effect of controlled tensions in pivoted bases and increased effective area of the gravity idler.

By setting Tables 2 and 3 up as correction factors a more concise and flexible table is the result.

The requirements of various industries often introduce adverse conditions that must be taken into consideration, and their values cannot be extracted from the factors as represented in a laboratory test.

It is necessary to belt a drive for the peak loads that will be encountered. The nameplate rating of a motor is not a true indication of the peak loads that may be met and the correct overload capacity and torque characteristics of various motors are not always available to the millman. To insure against under-belting and premature belt failure, overload ratings of the motor, atmospheric conditions, service, etc., must be brought into the calculation to assure satisfactory belt performance. It is fully realized that conditions in isolated cases exist which may not be covered by this table, and exceptions must be made in those instances.

A caution should be made that in no instance should a belt rating be taken from any one table without using the proper correction factor from the other two to compensate for the individual condition surrounding the particular application.

In Figure A the available leather belting horsepower curves have been plotted. They have been compiled from practically all existing manufacturers and authorities. It will be noted that the curve, as representing the factors given in the A.L.B.A. Table 1, falls by chance as a fair average of these curves. The curves that fall below the

TABLE 3

Service Correction Factors

Atmospheric Condition	Clean, scheduled maintenance	1.2
	Normal	1.0
	Oily, wet or dusty	.7
Angle of Center Line	Horizontal to 60 degrees from horizontal	1.0
	60 to 75 degrees from horizontal	.9
	75 to 90 degrees from horizontal	.8
Pulley Material	Fibre on motor and small pulleys	1.2
	Cast iron or steel	1.0
Service	Temporary or Intermittent	1.2
	Normal	1.0
	Important or continuous	.8
Peak Loads	Light, steady load such as: Steam Engines, Steam Turbines, Diesel Engines, and Multiple Cylinder Gasoline Engines	1.0
	Jerky loads, reciprocating machines such as: Normal Starting Torque Squirrel-Cage Motors, Shunt Wound D. C. Motors, and Single Cylinder Gasoline Engines	.8
	Shock and reversing loads, full voltage start such as: Wound Rotor (Slip Ring) Motors, Synchronous Motors	.6

TABLE 4

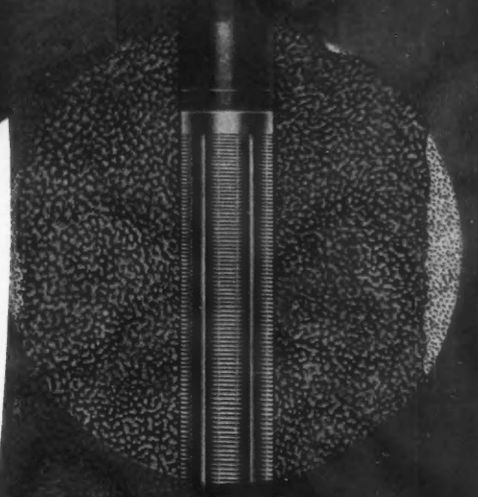
Thickness Specifications for Flat Leather Belting

Approved and Adopted by American Leather Belting Association

Medium, Single Ply, 11/64″ Average Heavy, Single Ply, 13/64″ Average	"All thicknesses in this table are average thickness in inches, and should be determined by measuring 20 coils and dividing this total by the number of coils measured. In rolls of belting containing less than 20 coils, the average thickness should be determined by measuring all the coils in the roll. Allowable tolerances for all thicknesses plus or minus 1/64th inch from above averages."
Light, Double Ply, 18/64″ Average Medium, Double Ply, 20/64″ Average Heavy, Double Ply, 23/64″ Average	Uniformity: No point in single belting shall be more than 3/64″ thicker or more than 2/64″ thinner than the average thickness. With doubles, the tolerances shall be 2/64″ thicker or thinner than the average.
*Medium, Triple Ply, 30/64″ Average *Heavy, Triple Ply, 34/64″ Average	

***Triple Ply:** These are averages for general usage. Most triple ply belts are usually constructed for particular drive conditions. **Tolerances for Single and Double Ply Belts do not apply.** Consult a Leather Belting Manufacturer for specific information concerning thickness and construction of 3 ply belts.

In the Spotlight



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The Layne Gravel Pack has changed numerous wells from a liability to an asset. It will do the same for yours. Further information gladly furnished.

Layne & Bowler Co.

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A.L.B.A. do not necessarily mean that more conservative figures have been used. These curves represent the rating as a result of Table 1, and are conducted on large size pulleys. In many cases when the correction factors are applied the A.L.B.A. curve actually will fall below these curves for particular drives.

The following examples of how to use the tables may be helpful:

Example 1

Problem: Select belt for following drive—

Motor: 10 h.p. 1750 r.p.m., line start, induction.
Pulley, 6" diameter × 6¾" face, fibre.

Compressor: Started automatically against pressure.
Pulley, 30" diameter × 6½" face.

Conditions: Tight side of belt below, pulleys 6 feet center to center, center line approximately horizontal, important refrigeration service, normal atmospheric conditions.

Selection of Factors:

Belt Speed,

$$\frac{6 \times 3.14 \times 1750}{12} = 2750 \text{ ft. per minute.}$$

From Table 1, light double belt suited for 6" diameter pulley.

From Table 1, light double belt will transmit 6.7 horsepower per inch of width at 2750 feet per minute.

From Table 2, factor for center distance and small pulley diameter = 65.

From Table 3,

Atmospheric condition	1.0
Angle of center line	1.0
Pulley material	1.2
Service	.8
Peak load	.6

Calculation:

$$\frac{10}{6.7 \times .65 \times 1.0 \times 1.0 \times 1.2 \times .8 \times .6} = 3.99''$$

Therefore, use 4" light double belt.

Example 2

Problem: Determine capacity of 8" heavy double belt on following drive—

Lineshaft: 200 r.p.m., 48" diameter × 12" face cast iron pulley.

Fan: 600 r.p.m., 16" diameter × 12" face cast iron pulley, requiring 25 horsepower at this speed.

Conditions: Tight side above, 16 feet centers, drive nearly vertical, 8 hours per day operation, exhausting from woodworking shop, dusty condition.

Selection of Factors:

Belt Speed,

$$\frac{48 \times 3.14 \times 200}{12} = 2500 \text{ ft. per minute}$$

From Table 1, heavy double belt is suited for 16" diameter pulley.

From Table 1, heavy double belt will transmit 8.55 horsepower per inch of width at 2500 feet per minute.

From Table 2, factor for center distance and small pulley diameter = .80.

From Table 3.

Atmospheric condition	.7
Angle of center line	.8
Pulley material	1.0
Service	1.0
Peak load	1.0

Calculation:

$8 \times 8.55 \times .80 \times .7 \times .8 \times 1.0 \times 1.0 = 30.6$ h.p.

Therefore, belt not suited for 35 horsepower load.

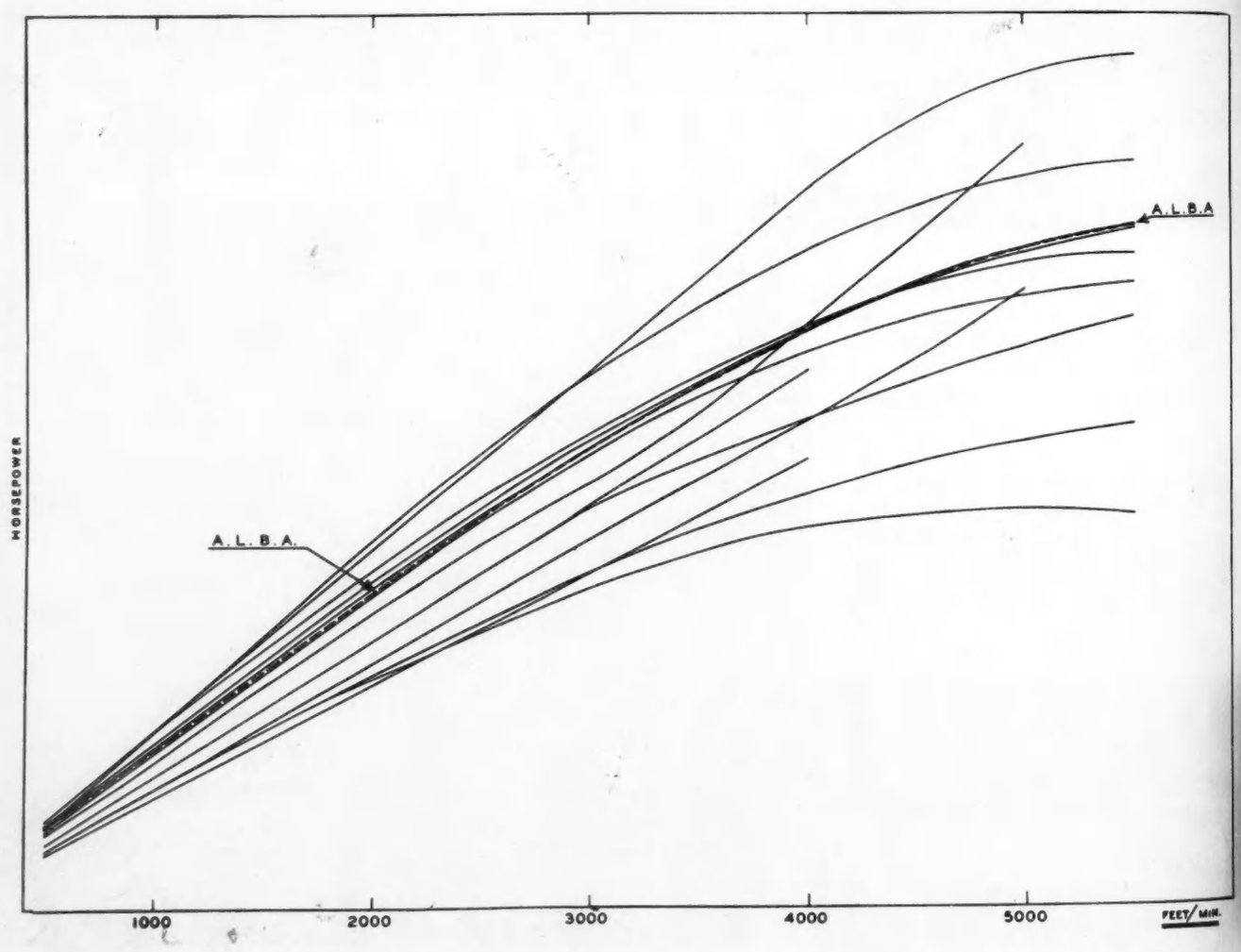
Note: This belt can be used if any one of the following changes are made—

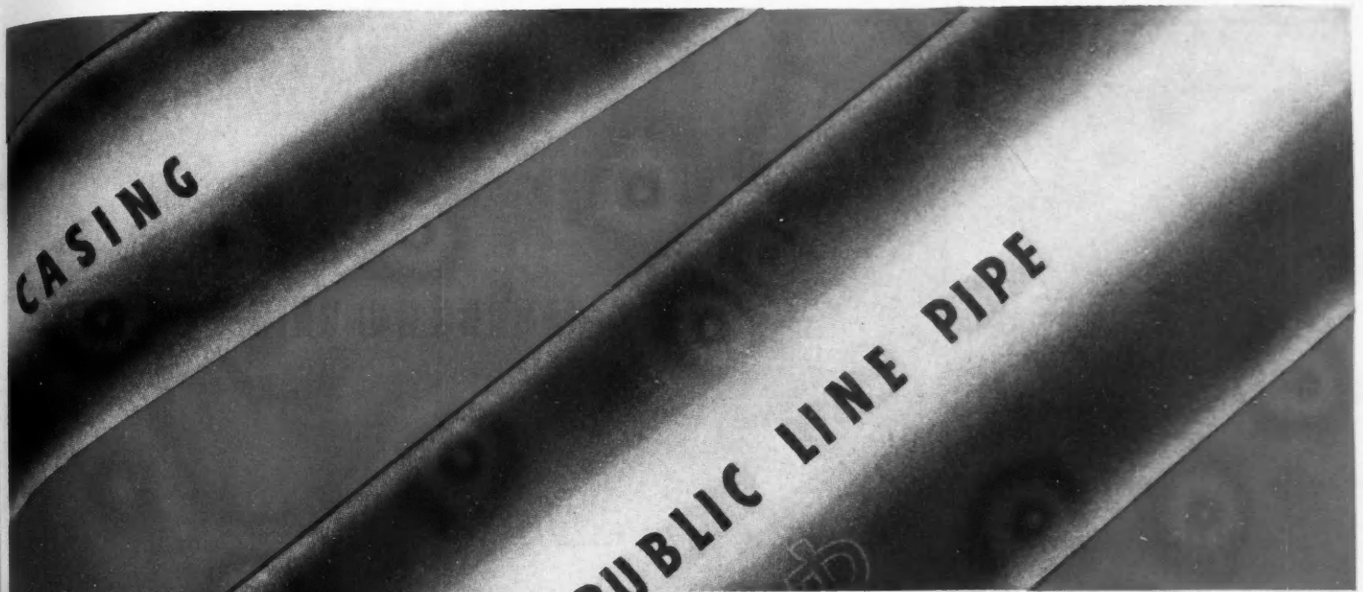
1. Use fibre pulley on fan.
2. Reduce angle of drive to 60 degrees from horizontal.
3. Protect drive from dust.
4. Increase pulley diameters to 60" and 20". If it is not practical to change the drive, use a 10" heavy double belt.

A limitation is necessarily set in the scope of tables of this type, and where speeds over 6000 feet per minute are reached, a leather belting manufacturer should be consulted. This same applies in cases where a pivoted base is installed with the tight side away from the pivot point.

The offer of the A.L.B.A. to render a consulting engineering service to users of leather belting, where special conditions exist, has been greeted with considerable enthusiasm from many men confronted with transmission problems. And with modern leather belting as it is today, conditions are being met in industry that some years back were beyond the limitations of the product.

FIGURE A





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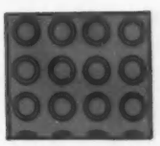
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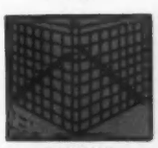
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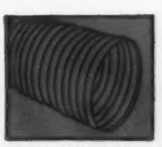
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TRUSCON STEEL COMPANY
STEEL AND TUBES, INC.

Fitting The Pump To Well Conditions

Pumping Series Article No. 2

Since the best pump is the one that will lift a well's output at the lowest over-all costs, including expenses for servicing and the loss of production because of shutdowns, careful study of existing conditions will prove of economic benefit.

By E. A. JENKINS, Production Engineer, Skelly Oil Company

IT IS EVIDENT that the pump best fitted to a well is the one that will produce the well's allowable most economically, or, if the well is unrestricted, the greatest amount of oil at the lowest over-all cost per barrel. So in selecting the pump to be used, not only must the pump itself be considered, but also the probable mechanical and economical effect of such a pump on the rods and surface equipment.

If the pumping front, pumping unit, or jack installed at the well is of general design and capacity to do the work at hand, there are three variables, within certain limits, to be used in selecting the pump: (1) length of stroke, (2) number of strokes, and (3) bore of the pump. With the proper combination of these three factors, it is possible to arrive at the best suited plunger displacement for obtaining the amount of fluid to be produced. The surface equipment, which has been set at the well, will be limited to a certain length of stroke and also to a reasonable number of strokes per minute. This makes the selection of the pump of proper bore of greatest importance.

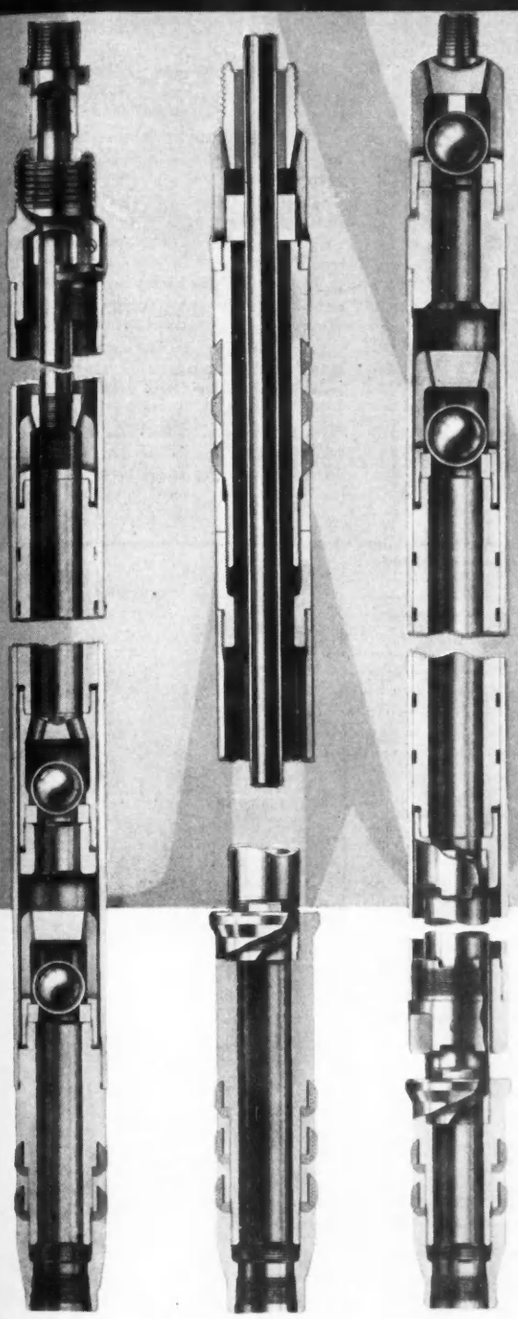
Before going on with the discussion of pumps, we must consider the surface equipment. The equipment used in pumping a well from the engine through the transmission drive, and including the rods and the pump, operate as a unit system. No one part of this system can be considered without bearing in mind its relation to the other portions. The selection of the proper surface equipment is of importance since it involves a considerable expenditure of money, and is a primary factor in successful and economical pumping.

The selection of the surface equipment is influenced by many of the factors that enter into the selection of the pump. It is wasteful to install equipment of capacity far in excess of that which will be needed to do the work in view, but, it is even more costly to be underpowered. When selecting the surface equipment for a well, a careful study of present as well as probable future conditions must be made,[1] so that ample power and capacity will be available, and also so costly power and capacity will not be installed in excess of any possible predictable need. However, since this is a discussion of pumps, we will, as stated above, assume that the surface equipment is of ample design to meet the conditions which will be imposed upon it.

The theoretical capacity of a pump is, of course, the product of the bore of the pump, or net area of the plunger, times the length of stroke multiplied by the number of strokes per minute to equal the volume displaced. This product, must, however, be modified by rod and tubing stretch, and by pump efficiency. The theoretical upstroke load is the weight of the fluid plus

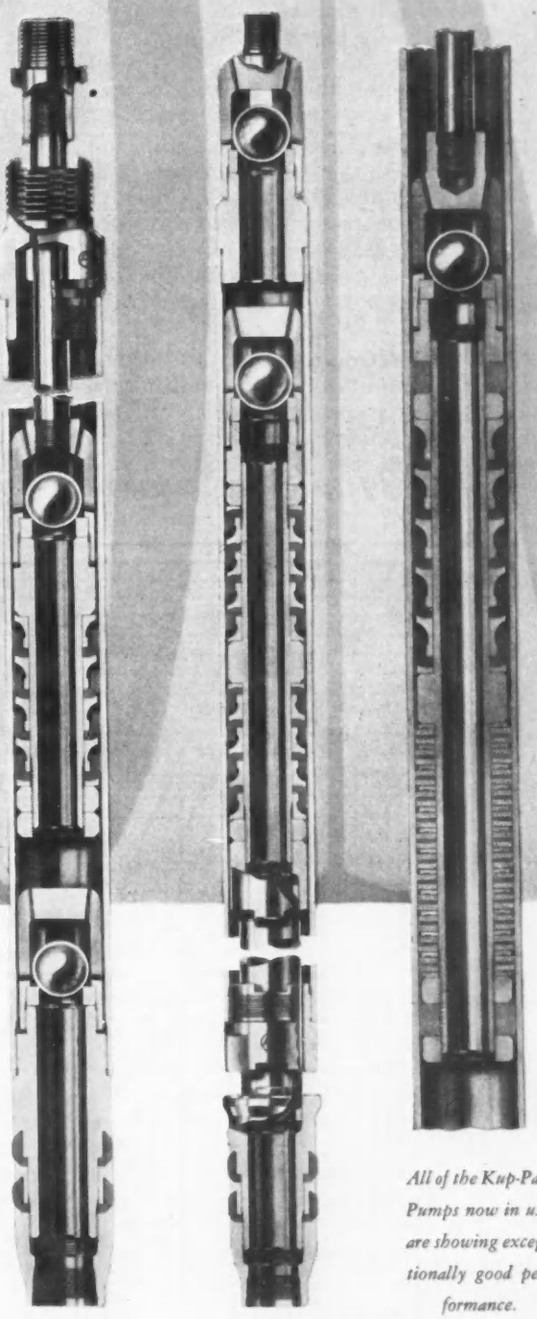
[1] See pumping series article No. 1, The Oil Weekly, April 3, 1939.

REPRESENT THE OIL INDUSTRY'S MOST COMPLETE LINI



AXELSON SURE-SEAL PUMPS

For average conditions, this *new* line is recommended. The barrels are made of cold drawn precision seamless steel tubing, and the bores are honed to mirror finish and to definite diameters controlled by close tolerances. Plungers are chromium plated for hardness, friction reduction and resistance to corrosion. New (patent applied for) pin type plungers absolutely prevent swelling of plungers, thereby eliminating damage to plunger ends and plating when fittings are assembled. These Pumps have the precision qualities found in all Axelson products—resulting in long life, efficient production, low lifting costs. The price bracket is attractive.



All of the Kup-Pak Pumps now in use are showing exceptionally good performance.

AXELSON KUP-PAK PUMPS

Axelson's long experience and unrivaled facilities make this new line of Pumps available at interesting prices. The barrels are produced from cold drawn seamless steel tubing, actually honed in special honing machines. Materials and workmanship are fully up to Axelson quality standards. Kup-Pak Pumps are furnished with three choices as to plungers—KUP-SEAL (all valve cups), RING-SEAL (all packing rings) and RING-KUP (50/50 cups and rings).

DEEP WELL PLUNGER PUMPS AND SUCKER RODS

the weight of the rods in air. The weight of the fluid being:

Fluid load equals D times .434 times GXA.

In which "D" is pump depth in feet, or depth of fluid level from surface, if known. "G" is the net specific gravity of the fluid, which is specific gravity of oil times percent of oil, plus specific gravity of water times percent of water. "A" equals net plunger area. This is, of course, somewhat modified by friction acceleration factors, etc.

However, many of the pump, rod and equipment manufacturers will supply tables from which a reasonably accurate estimate of the productive capacity of a pump under any set of conditions may be obtained, also the probable load to be expected.

In selecting a pump to fit the well's condition, the operator will naturally have certain data and information available. For sake of discussion, there is listed below a number of factors which should be known, all which directly influence the selection of the pump. No importance is given to the order in which they appear.

1. Productive capacity of well in total fluid.
2. Allowable and effects of proration.
3. Labor situation, hours well is to be produced.
4. Capacity and design of surface equipment.
5. Size of oil string casing.
6. Size of tubing, if already in well.
7. Gravity of oil and percent of water.
8. Gas condition.
9. Sand condition.
10. Gyp or other lime deposits.
11. Possible corrosive action of fluid.
12. Depth of well.

All these factors have some bearing on the pump to be used. We will take them up in order and discuss each. There is, however, an over-lapping and tying together of many of these points.

The productive capacity of the well in total fluid need only be considered when no proration restrictions are imposed, or when the

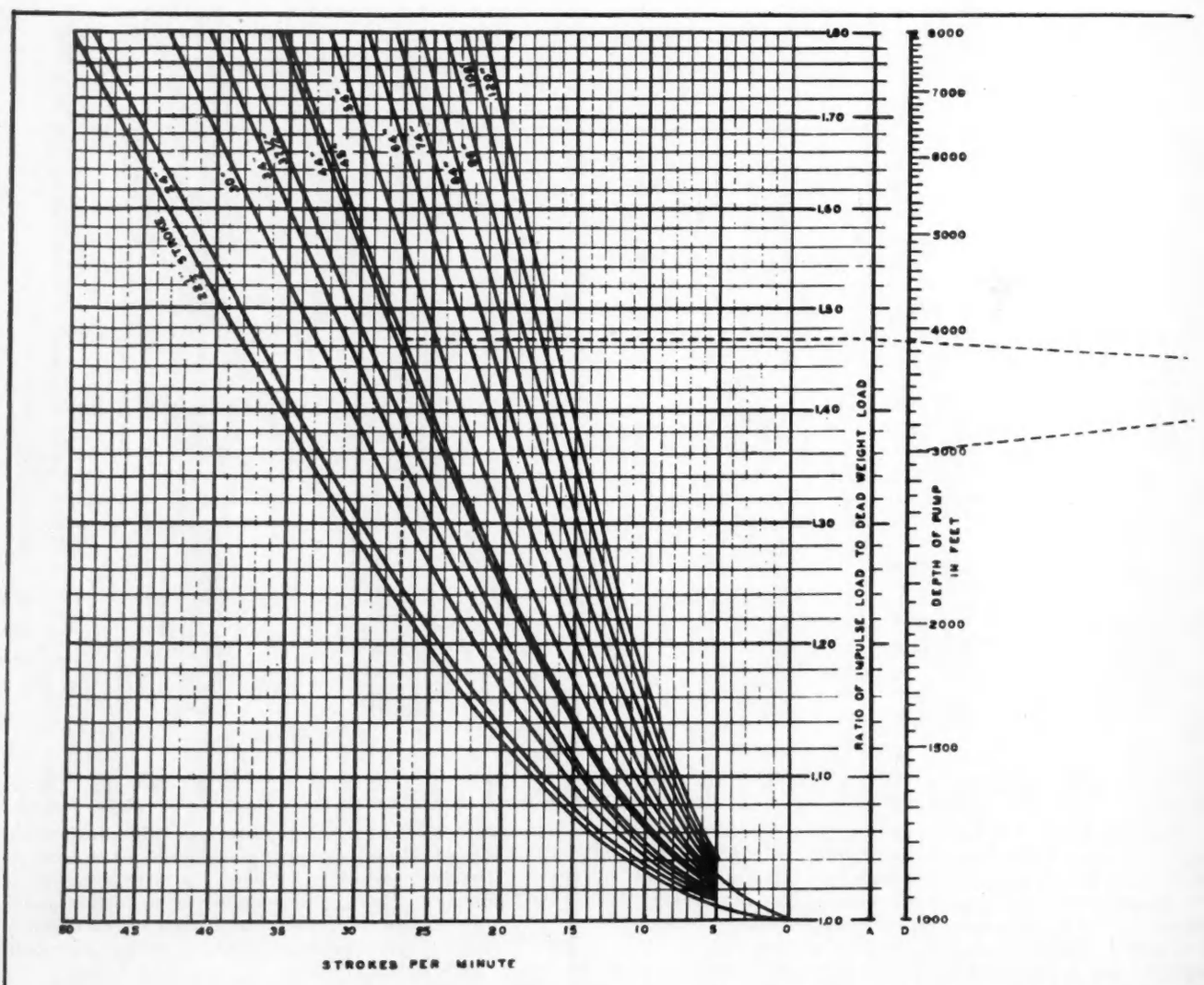
Sucker Rod

Solution of the following program is shown by dotted lines on the graphs below:

"What is the total impulse load on polish rod of a well pumping from 3000 feet, with ¾-inch rods, 2¼-inch diameter plunger, 45-inch stroke, and 27 strokes per minute, fluid .875 specific gravity."

How the problem was solved is set forth in the following four steps:

1. From a point on the left hand graph where 27 strokes per minute crosses the curve for 45-inch strokes, a dotted line was carried vertically to line A, which represents the ratio of impulse load to dead weight load.



same pump is to be used for taking potentials and producing the allowable. Normally, the pump used for taking potentials is not adaptable for regular producing. The usual potential pump is of larger bore than would be used in producing the regular allowable, and also the potential pump is usually equipped with a short, loosely fitted plunger, a minus 6 to minus 8 one thousands, and from 24 inches to 36 inches in length. It is primarily adapted to be run at extremely

Load Chart

2. The next step took place on the right hand chart. From a point where the line representing a 2¼-inch plunger diameter bisects the ¾-inch rod curve a dotted line was carried vertically to line B, which represents the dead weight load in pounds per 100 feet.

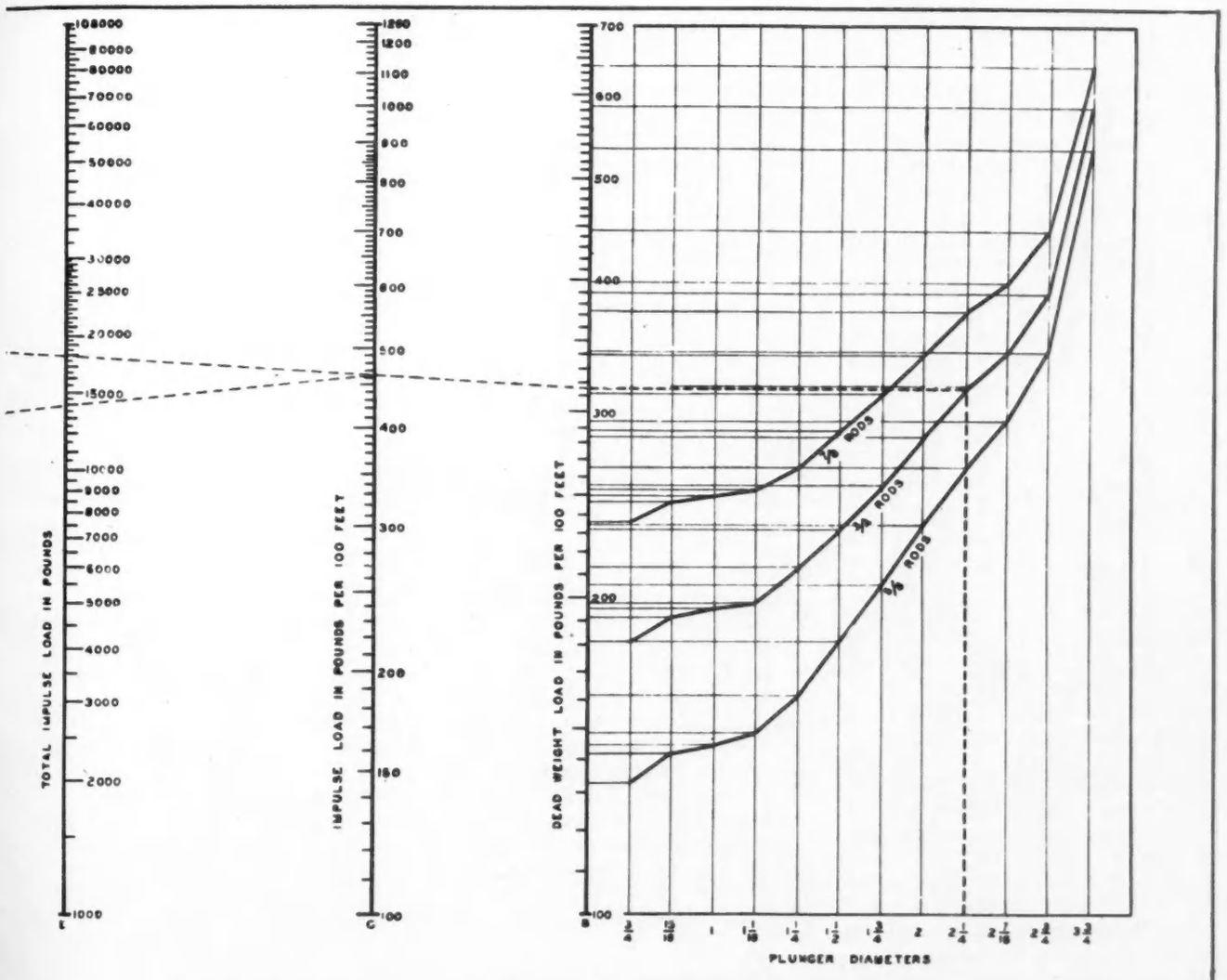
3. Then, a dotted line was extended from line B to the previously determined point on line A.

4. The depth of the pump (3000 feet) on line D was then connected to the point at which the line made in Step No. 3 crossed line C, the impulse load in pounds per 100 feet. Where this line crossed line E gave the total impulse load in pounds.

Diam. of Rods	Volumes Cu. In. Weight Lbs. of Rods per 100 Feet		Weight of Plunger Supported Fluid (1.00 Specific Gravity) per 100 Feet. To Obtain Correct Dead Weight, Multiply Weight of Fluid, Shown Below, by Specific Gravity, and Add to Weight of Rods.											
			¾"	15/16"	1"	1 1/16"	1¼"	1½"	1¾"	2"	2¼"	2 7/16"	2¾"	3¾"
	Vol.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.	Wt., Lbs.
⅝"	407	115	19.1	29.9	33.8	38.2	53.3	76.8	104.16	136.3	172.3	202.24	257.8	479.35
¾"	577	164	19.1	29.9	33.8	38.2	53.3	76.8	104.16	136.3	172.3	202.24	257.8	479.35
⅞"	775	220	19.1	29.9	33.8	38.2	53.3	76.8	104.16	136.3	172.3	202.24	257.8	479.35

SPECIFIC GRAVITY CORRESPONDING TO DEGREES A. P. I.

Degrees A.P.I.	S.G. 60°	Degrees A.P.I.	S.G. 60°	Degrees A.P.I.	S.G. 60°	Degrees A.P.I.	S.G. 60°	Degrees A.P.I.	S.G. 60°	Degrees A.P.I.	S.G. 60°
10	1.000	26	.898	42	.816	58	.747	74	.689	90	.639
11	.993	27	.893	43	.811	59	.743	75	.685	91	.636
12	.986	28	.887	44	.806	60	.739	76	.682	92	.633
13	.979	29	.882	45	.802	61	.735	77	.679	93	.630
14	.973	30	.876	46	.797	62	.731	78	.675	94	.628
15	.966	31	.871	47	.793	63	.728	79	.672	95	.625
16	.959	32	.865	48	.788	64	.724	80	.669	96	.622
17	.953	33	.860	49	.784	65	.720	81	.666	97	.619
18	.940	34	.855	50	.780	66	.717	82	.663	98	.617
19	.940	35	.850	51	.775	67	.713	83	.660	99	.614
20	.934	36	.845	52	.771	68	.709	84	.657	100	.611
21	.928	37	.840	53	.767	69	.706	85	.654	....	.....
22	.923	38	.835	54	.763	70	.702	86	.651	....	.....
23	.916	39	.830	55	.759	71	.699	87	.648	....	.....
24	.910	40	.825	56	.755	72	.695	88	.645	....	.....
25	.904	41	.820	57	.751	73	.692	89	.642	....	.....


TOTAL IMPULSE LOAD IN POUNDS
IMPULSE LOAD IN POUNDS PER 100 FEET
DEAD WEIGHT LOAD IN POUNDS PER 100 FEET
⅝ RODS
¾ RODS
⅞ RODS
PLUNGER DIAMETERS

high speeds. This pump, under normal operating conditions, would cause considerable slippage, although the allowable may be produced with the potential pump by producing a few days a week, or a few hours per day. However, elements of flow of oil, gas and water within the reservoir may make a more steady and somewhat slower rate of production preferable over shorter periods of intensive production.

In many instances, the potential may be taken with the pump that is fitted to the regular operating condition, the potential being taken by an increase in the number of strokes. This is particularly true when the allowable is nearly equal to the well's productive capacity, or where, due to large amounts of water to be handled, the largest bore pump that can be carried by the rods and surface equipment is being used regularly. However, combining points No. 1 and No. 2, the first problem is to select the pump of bore and length that will, within the efficient ranges of stroke and number of strokes, produce the allowable or the total production of the well.

This brings us to point No. 3. It is sometimes desirable, and this is particularly true of wells which are restricted to a small proportion of their capacity, to produce the allowable in a few days per month, or in a few hours each day. In this manner, the labor requirements are reduced, and the wear and tear of constant operation is lessened. In this case, the size of the pump used is such that the production can be obtained in the desired number of hours or days. In such instances, as mentioned before, the potential pump may be used. This should only be done where there is little or no fear of water encroachment.

On point No. 4, we have, for this discussion, assumed that the surface equipment is suitable for the conditions we are to impose upon it. We sometimes find though that in wells where extremely large volumes of water are present, it is more economical to produce a smaller amount of total fluid, and consequently less oil, so that the pumping equipment and rods will not be overloaded. It always must be remembered—with other factors being equal—that the fluid load is directly proportional to the area of the pump, and that the size of the tubing has no bearing on the rod load. It effects pump efficiency only in friction losses and reduction of plunger travel by reason of tubing elongation under load. Then only if surface equipment of improper size or design has been installed, need we consider the pumping equipment. However, we always must bear in mind the limitations of load, number of strokes, and length of stroke, which are inherent parts of each unit of pumping equipment. Since it can be shown that peak loads, and consequently torque loads, increase with speed and length of stroke, and that torque loads increase directly with length of stroke, it is well to strike a happy medium of the number of strokes and length of stroke when selecting the pump. To obtain smooth operation, the equipment must be run at a speed within the range imposed by the design and ratio of the drive.

In point No. 5 the size of the oil string casing only affects our pump selection in that it limits the size of tubing which can be run. The size of the tubing naturally limits the size of the pump that can be run.

Point No. 6 ties in with point No. 5 by the same reason.

Gravity of the oil and the percent of water have a direct bearing on the load to be expected and the fit of the plunger to be used. Obviously, a heavy viscous oil will require a less closely fitted pump than would high gravity oil. Due to the poor lubricating properties of water and possible higher temperatures often found when handling large volumes of water, the fit of the plunger in the pump is highly important. Too, it has been found beneficial to use a grooved plunger when pumping high percentages of water. These remarks apply principally to the plunger, metal to metal pump. In the cup pump, or pump with cut rings or spiral packing, the fit is not so important. Yet in this type of pump, looser fit rings may be used in more viscous fluid thereby reducing friction load.

The presence of gas may result in specific problems. This is true particularly in wells when they are first put on the pump, pumping action is often interfered with by free gas, or by gas dissolved in the oil coming out of solution when the crude enters the pumping unit. This gas cuts down pump efficiencies greatly by occupying space in the pump which should be filled with oil, interfering with valve action, and causing rough, irregular pumping that is hard on rods. The pump selected for this type of well should be such that the traveling and standing valves can be spaced very close together. Special care should be taken that the pump be no larger than needed. A trial and error method may have to be used to arrive at the correct pump to use, since it has been found that some wells of this character pump better with a short, fast stroke, and others with a long, slow stroke.

Sand is a problem in many areas. The presence of loose or floating sand is hard to combat. Pumps made of extremely hard metals are used with some success in this type of well, also the fluid packed or slippage type of pump has been used with success. In more shallow wells, cup and repack pumps may be found best. Local practice will give a lead to the solution of this problem.

Deposition of gyp and lime on pumping equipment is difficult to foretell. Experience on other wells in the immediate vicinity is the best, although not infallible, yardstick. On this type of well, it is wise to use a pump that strokes out of both ends of the barrel which prevents the accumulation of gyp or lime on the plunger, and in the tube or liners.

Corrosive action in a well naturally leads the operator to use noncorrosive materials. The type of material to be used must be determined by the kind of corrosion found. In wells that have been acidized and have not been cleared of the spent acid, it is well to use a cheap cup pump until it is certain the acid has been exhausted, at which time the desired pump may be installed.

The factor of depth is important in that the pressure imposed on the pump increases directly with depth. Also, the cost of pulling jobs increases with depth. Therefore, the use of more expensive pumps, which give longer runs in proportion to repairs, is justified.

Although the purchase price of a pump is not large in comparison with other items of the well, the cost of servicing and lost production from shut downs makes the selection of the proper pump highly important. We then arrive back to the opening statement that the best pump, and cheapest one, is the pump that will produce the oil for the lowest over-all cost per barrel.

NEXT WEEK: *"Fishing for Facts that Will Reduce Pumping Costs."*

Here's the

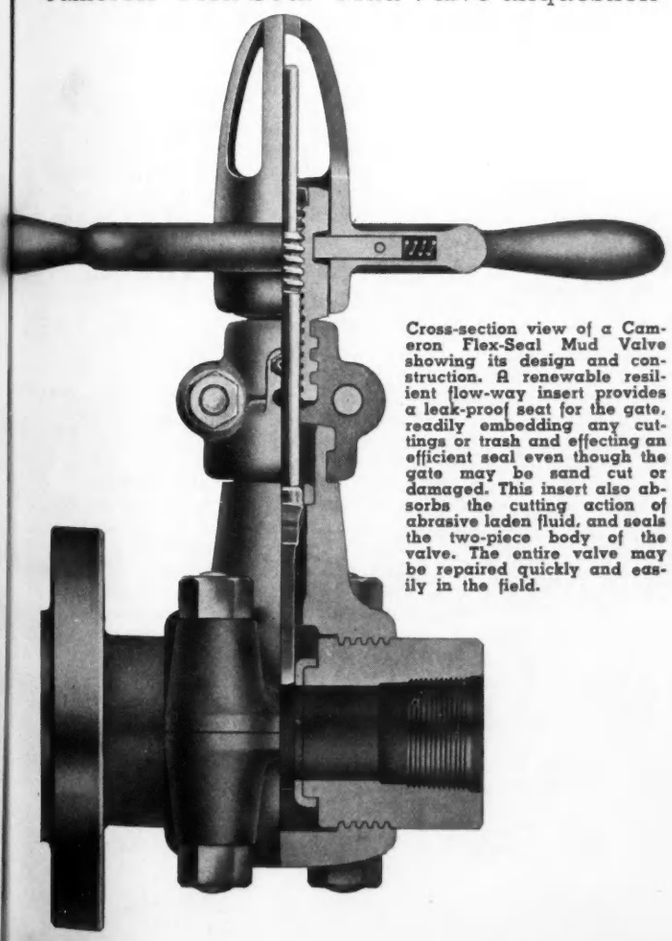
CAMERON *flex-seal* MUD VALVE

THAT MADE 51,250 FEET OF HOLE IN SLUSH PUMP RELIEF SERVICE

Total Maintenance — $6.70

New Valve Saves 93% Mud Valve Maintenance Cost

In a recent test of various types of mud valves on slush pump relief service in the Old Ocean Field, Brazoria County, Texas, the Cameron "Flex-Seal" Mud Valve unquestionably demonstrated its advantages over conventional type valves.



Cross-section view of a Cameron Flex-Seal Mud Valve showing its design and construction. A renewable resilient flow-way insert provides a leak-proof seat for the gate, readily embedding any cuttings or trash and effecting an efficient seal even though the gate may be sand cut or damaged. This insert also absorbs the cutting action of abrasive laden fluid, and seals the two-piece body of the valve. The entire valve may be repaired quickly and easily in the field.

A Cameron 2" Flex-Seal Mud Valve on the pump relief outlet of one rig completed five 10,250' wells, or a total of 51,250'. At the completion of the fifth well, repair costs on the valve amounted to only $6.70.

The average life of the competitive types of valves tested was one well. The average repair cost was $22.00 per well.

The results of this demonstration, which proved that the Cameron "Flex-Seal" Mud Valve can be maintained for 93% less cost than conventional types of valves, should command the interest of all who are responsible for the purchase of valves for mud manifold service. Interested operators are invited to write for an illustrated bulletin providing full mechanical details of design and construction.

Cameron "Flex-Seal" Mud Valves are available in 2", 3", and 4" sizes—6,000 lbs. test.

CAMERON IRON WORKS, INC.
711 MILBY ST. HOUSTON, TEXAS
EXPORT: 74 TRINITY PLACE, NEW YORK, N. Y.

WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Canadian Fields

Alberta commission to seek financial aid for line. Turner Valley allowable raised to 17,500 barrels.

Five highly important developments affecting Canadian oil operations, particularly in Alberta fields, took place last week. Two of them are of international importance.

First, Hon. N. E. Tanner, Alberta minister of lands and mines, announced a delegation would leave immediately for London, where full information concerning the West Canadian oil picture will be presented to the British admiralty and other British authorities. The trip, which Alberta operators hope will lead to British financial aid in constructing a crude oil pipe line from Turner Valley to either the west coast or the Great Lakes, is being made on the invitation of British officials.

Second, Commissioner Hugh Scully of the Dominion Customs Department at Ottawa signed an order to the effect that on and after April 22 a dumping duty would be imposed on United States crude invoiced to Canada at less than posted field prices.

Would Lower Rates

Third, the McGillivray royal commission, which since late last year has been engaged in an investigation of the Alberta petroleum industry, recommended a downward revision of rates charged by the Royalite Oil Company, Ltd., for pipe line transportation of crude from Turner Valley to Calgary and that pipe lines be placed under the jurisdiction of the public utility commission. Legislation providing provincial control of pipe lines was immediately introduced at Edmonton by Hon. E. C. Manning, provincial secretary and minister of trade and industry, and was quickly advanced to third reading.

Fourth, as a companion measure to the pipe line control bill, the provincial secretary introduced a bill calling for price fixing of crude oil and petroleum products by the Alberta government.

Fifth, the Alberta Petroleum & Natural Gas Conservation Board issued a new schedule of allowables for Turner Valley crude producers which increases the field's daily allowable from 10,000 to 17,500 barrels. The boost is in line with the increasing demand occasioned by the approach of the high-consuming season.

Members of the delegation to London, which was to sail from Canada April 8, are W. F. Knode, Calgary, chairman of the provincial petroleum and natural gas conservation board; Dr. G. S. Hume, of the Dominion geological survey, Ottawa, and Tanner.

Lack of pipe line facilities to make Alberta crude available to markets beyond the western prairie provinces is is now one of the most serious handicaps to continued extensive development of the Turner Valley and exploration of other Alberta structures.

Line Cost Estimates

Construction of a pipe line from Turner Valley to Vancouver, 900 miles, will cost about $15,000,000, while a 1200-mile line eastward to Fort William, at the head of the Great Lakes, would cost an estimated $22,000,000. The pipe line to the west coast would open a wide market in western British Columbia now served by California and South American fields, as well as providing export to Australia, New Zealand and other countries, while an outlet to the Great Lakes would make it possible for Alberta operators to compete in the profitable east Canadian market now served principally from United States fields.

Dumping Duty

The dumping duty will apply to crude oil in accordance with a classification in the 1936 amendment to the customs act which required a production of any article to be 10 percent of the annual Canadian requirements. At present, crude enters Canada free of duty. It will continue duty-free as long as it is purchased at posted field prices. Imposition of the dumping duty was requested last month by Herbert Greenfield, president of the Alberta Petroleum Association.

The McGillivray report, which was presented to the legislature, recommended that properties of Royalite Oil Company, Limited, and its parent company, Imperial Oil Company, Limited, used in the gathering, transporting and delivering petroleum and petroleum products by pipe line between Turner Valley and Calgary be declared common carriers, and be placed under the regulation and control of the board of public utility commissioners.

While no recommendation for a rate was made to replace the present 15 cents a barrel charge for transporting crude the 45 miles to Calgary, the commission declared the matter gave it "grave concern" and that evidence left no doubt "as to the need for, and the fairness of, a reduction in the pipe line rate." It said in part:

Wants Action

"In order, however, that there may not be a year's delay in putting in effect such recommendation of your commissioners as may be made with respect to the pipe line rate, if such recommendation is considered worthy of acceptance, your commissioners respectfully recommend that the legislature be invited to give statutory authority and direction to the board of public utility commissioners to accept and forthwith put into effect the pipe line rate recommended by your commissioners, if and when such rate is aproved by the Lieutenant-Governor-in-Council."

Hitting at United States control of the Imperial company, the commission added: "Your commissioners are of the opinion that all persons desirous of transporting oil from Turner Valley field by pipe line, who are free to do so under the law, should be at liberty to do so through existing pipe lines and not be subject to the decision of the Royalite Oil Company, Limited, or Imperial Oil Company, Limited, or the Standard Oil Company of New Jersey as to whether or not such oil should be transported."

Price Fixing Bill

The bill calling for price fixing of petroleum products would cover crude oil, gasoline, kerosene, gas oil and coal tar. It is a proposed enabling act which would give authority to the lieutenant-governor-in-council to give effect of law to any recommendations of an investigating commission under the public inquiries act. The price could be fixed from time to time in any designated area or areas of the province, whether it had to do with a producer, refiner, or marketer.

The new proration order moves Home Oil Company's Millarville 2, important Turner Valley wildcat 12 miles north of the principal crude area, to the head of the 70 valley crude wells. Its new allowable, based on a formula

taking into consideration gas/oil ratio, bottom hole pressure and area drained, is 514 barrels daily, compared to 276 under the proration order which has been effective since February 1.

Second largest well is Royal Canadian Oils, Limited's 2, increased from 302 to 484 barrels daily. Other large wells are Vulcan-Brown Petroleums, Limited's 1, upped from 283 to 456 barrels; Extension Petroleums, Limited's 1, 277 to 443 barrels; Sundance Royalties, Limited's 1, 262 to 432 barrels; Anglo-Canadian Oil Company, Limited's 3, 199 to 424 barrels, and Frontier Royalties, Limited's 1, 256 to 410 barrels.

Japan causing increase in California oil shipments

Petroleum shipments out of Los Angeles set another record last week, chiefly as a result of the steadily rising flood of California oil to Japan, when 1,833,000 barrels went out, the Marine Exchange reports. During the past two weeks 3,440,000 barrels were dispatched, and indications are that the April oil movement will exceed March's high of 5,541,864 barrels. The tanker parade this week will be quite imposing, the bulk of the shipment going to the Japanese navy.

Late last week something over 382,000 barrels went out to Japan in five vessels. These included, in order of departure, the little Nippon Tankers' carrier Soyo Maru, which took a part of a cargo from The Texas Company's docks to Formosa; the big Swedish tankship Sveaborg, out early in the week with 95,000 barrels of fuel from the General Petroleum Corporation's docks under charter to Ogura Oil Company; Nippon Kaiun Kisen Kaisya giant new express tanker Akatuki Maru, out last Tuesday (April 4) with 95,000 barrels from Standard Oil Company's El Segundo terminals, while last Wednesday the big British tramp Athelduke left with 85,000 barrels from General Petroleum's docks for Yokohama, and the little Daini Ogura Maru, taking 67,000 barrels at the Union Oil Company's docks.

Peruvian government gets 47-barrel well at Villar

The Peruvian government, developing what is locally called the Villar zone, recently completed the largest well in the area: its initial production was 47 barrels, according to telegraphic advice received in Lima from government petroleum engineers.

Other recent completions in the Villar zone, sometimes referred to as a portion of Zorritos field, have averaged from 10 to 20 barrels daily, the oil averaging 34 gravity.

Peru contemplates purchase of additional drilling and producing equipment for development of the Villar zone, according to information supplied by Humberto Camillani, and has already started construction of a pipe line from the producing area to the port of Zorritos.

The government recently purchased a small refinery at Zorritos from Faustino G. Piaggio & Company.

Oil showings reported in Duncalian Desert, Ethiopia

Unconfirmed reports are that geologists working in the Duncalian desert of Ethiopia have found oil seepages and assured the Italian government that drilling with proper equipment would assure successful development of a commercially worthwhile oil field.

Germany prominent source of British oil tankers

Of 18 tankers of 6,195 tons or over gross tonnage launched in Continental Europe in 1938 and first registered under the British flag, 10 were built in Germany, 5 in Denmark, 2 in Italy, and 1 in Holland.

London appeared 8 times on the list as the port of first registry, Dublin 7 times, Newcastle twice and Liverpool once.

Seven of the tankers were for Inver Tankers, Limited; 4 were for Oriental Tankers, Limited; 3 were for Anglo Saxon Petroleum Company, Limited; and 1 each was for Northern Petroleum Tank Steamship Company, Limited, Astrakan Steamship Company, Limited, Field Tank Steamship Company, Limited, and Standard Transportation Company, Limited. Deadweight tonnages of the vessels ranged from 9000 to 15,345 tons.

Lloyd's Register of Shipping and Registrar-General of Shipping and Seamen are sources of the foregoing figures.

Alberta February output reaches 340,107 barrels

Oil production from Alberta wells in February, 1939, was reported as follows, quantities being in barrels:

Turner Valley Limestone Oil Wells	303,861
Turner Valley Limestone Gas Wells	30,388
Turner Valley Shallow Oil Wells	628
Red Coulee, Light Crude	1,092
Wainwright, Heavy Crude	1,220
Miscellaneous	2,918
Total	340,107

Details of recoveries by companies are as follows:

ALBERTA PRODUCTION

February, 1939[1]

Turner Valley Limestone Oil Wells

Company	Barrels
Advance	1,728
Anglo-Canadian	12,319
Barsac	3,859
Brown	16,243
Brown Consolidated	7,290
B. and B.	1,530
Command	4,450
Commoil	11,335
Consolidated	6,069
Coronation	8,021
D. and D.	7,514
Davies	12,722
Extension	7,836
Firestone	4,938
Foundation	2,646
Four Star	2,825
Frontier	10,242
Globe	3,765
Granville	2,585
Home-Millarville	639b.
Mercury Royalties	3,081
Model	2,862b.
Model-Spooner	2,031
Monarch	3,071
National	4,262
Prairie	7,623
Richwell	4,071
Royal Canadian	13,884
Royal Crest	3,527
Royalite	54,504
Share	2,388
Spy Hill	1,708
Sunburst	2,836
Sundance	8,698
Sunset	13,628
Three Point	2,070
Turner Valley Royalties	2,328
United	5,790
Vulcan-Brown	8,027
Westflank	6,400
Westside	2,665
West Turner	14,321
York	5,980
Total	303,861

Gas Wells

Company	Barrels
Associated	117
Baltac	58
British Dominion	13
Carleton	18
Century	92
Dalhousie	9
East Crest	122
Foothills	44
Highwood-Sarcee	471
Hylo	169
Lowery	61
Mercury, Miracle, etc.	4,183
Merland	5
Model	162
Model-Spooner	1,306
Royalite	17,925
Sovereign	463
Spooner	139
Sterling Royalties	118
Structure	21
Union-Freehold	50
Not otherwise included	4,842
Total	30,388

Shallow Crude

Dalhousie	33
McDougall-Segur	476
McLeod	119
Total	628

Red Coulee, Light Crude

Vanalta	1,092

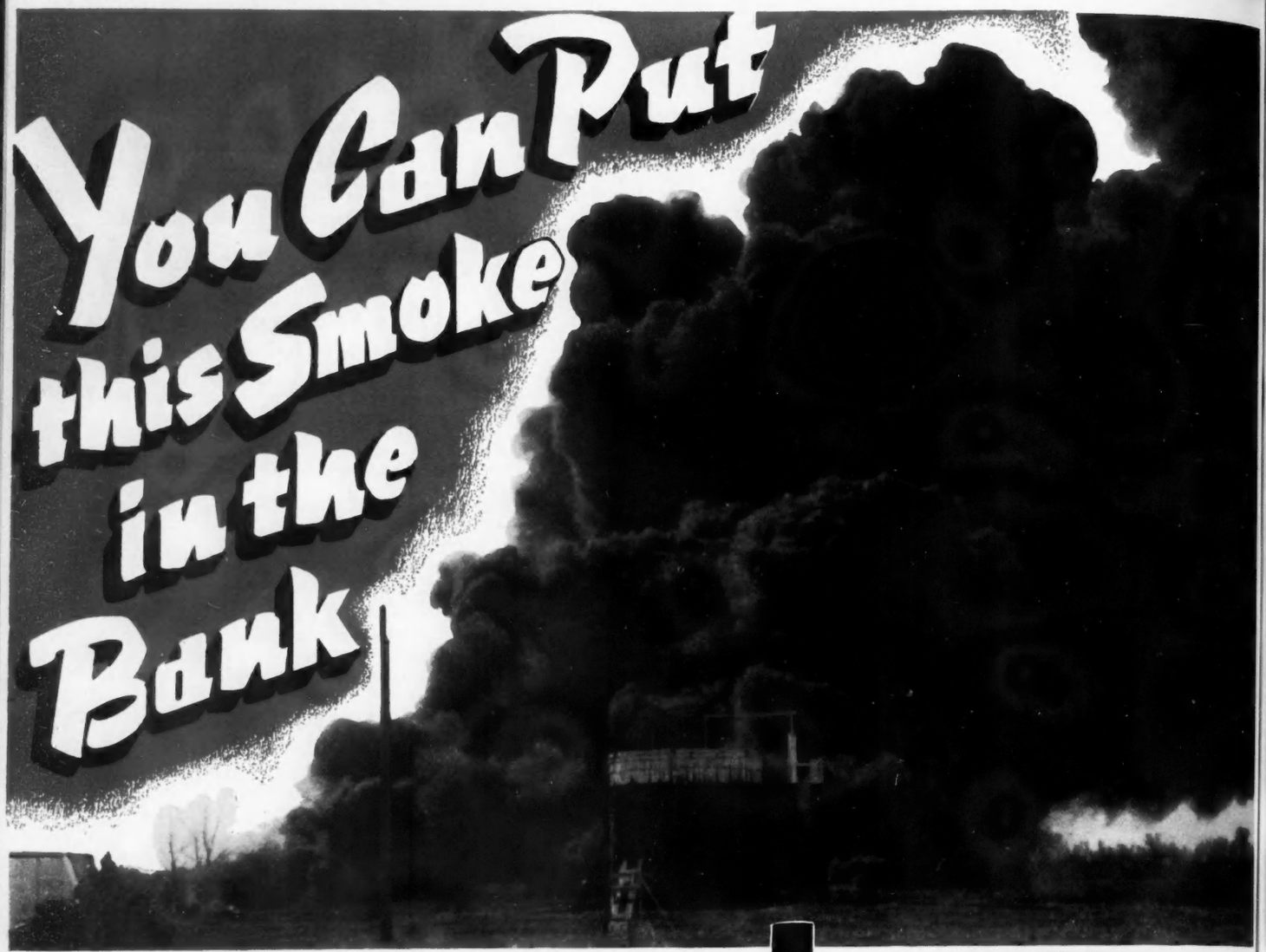
Wainwright, Heavy Crude

Edmonton-Wainwright	311b.
Wain-Con.	320
Wainwright Petroleums	71
Sasko-Wainwright	518b.
Total	1,220

Miscellaneous

Dina	324
Plains	2,594
Total	2,918

[1] Figures courtesy Alberta Department of Lands and Mines.
b. Corrected for previous estimation or error.

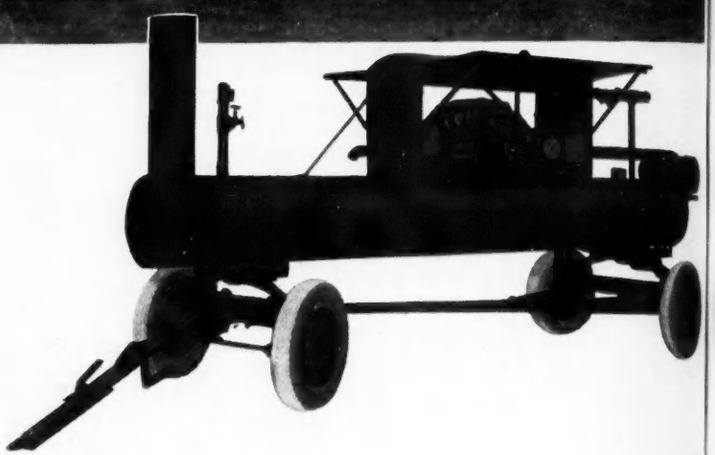


WITH A BRIDGEPORT-PRATT PORTABLE OIL TREATER

On any property, particularly those producing less than the pipe line allowable, every barrel of bad oil recovered is "money in the bank" for the producer. With the new Bridgeport-Pratt Portable Oil Treater, bad oil need not go up in smoke.

This Treater easily and inexpensively converts accumulated "tank bottoms" and waste oil into good saleable pipe line quality oil. In many cases enough waste oil is thus saved (frequently within a period of 60 days or less) to more than pay for the Treater—then practically every barrel saved is profit.

When this Treater is used continuously on the producing property to treat-out emulsions, which conventional heating, settling and washing processes do not adequately handle, it almost entirely eliminates accumulations of "tank bottoms" and waste oil which would eventually be burned or otherwise disposed of. It saves both labor and oil.



Phone or contact our nearest representative for additional information and specific recommendations on the handling of your treating problem.

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MEN IN THE INDUSTRY'S NEWS

FORD TURNER, land department manager of the Pure Oil Company in Michigan, has returned to headquarters at Saginaw after spending the past month, accompanied by his family, on vacation at San Antonio and other points in Texas. He qualified for the double-length vacation through having completed 20 years of service with the company.

ROBERT J. FELLINGHAM, a general attorney for Standard Oil Company of Indiana, will retire on company annuity April 1 after 21 years' service.

Fellingham joined the company in 1918, after serving as Illinois attorney for Travelers Insurance Company and as partner in the law firm of Tyrrell and Fellingham. He is a graduate of Northwestern University and Kent College of Law and a member of the American, Illinois State and Chicago Bar Associations and the Chicago Law Institute. Business associates honored him at a banquet at the Bismarck hotel last Friday night.

AUBREY W. SCHOFIELD, for the past year in Venezuela with Mene Grande Oil Company, has returned to Houston and taken over the duties of assistant superintendent of production in the Houston district of Gulf Oil Corporation. Reporting directly to John H Tucker, superintendent, Schofield will look after drilling and production operations in Zone 1, coastal Louisiana.

HORACE G. DUFTON of the warehouse department of Mene Grande Oil Company at Maracaibo, Venezuela, arrived in Miami recently for a two-month vacation. Before going to Venezuela two years ago, Dufton was with Mexican Gulf Oil Company and Cia. Mexicana de Petroleo "El Aguila" S. A. in Mexico for 15 years.

WILFRED G. EGGLETON, assistant auditor of Mexican Gulf Oil Company at Tampico, Mexico, is spending a two-week vacation in Mexico City and Tehuacan.

DR. BYRON B. BOATRIGHT of the Texas consulting engineering firm of Parker, Foran, Knode and Boatright, has been named chairman of the American Petroleum Institute committee on pressure maintenance.

PAUL TORREY, Sloan and Zook Company, Houston, has been appointed a member of the topical committee on drilling and production practice of the American Petroleum Institute's Division of Production. Torrey has also been appointed chairman of the special subcommittee on secondary-recovery methods.

WINTHROP P. HAYNES and Dr. Bela Hubbard, New York; S. Papp, Budapest, Hungary; C. Weidenmayer, with the Italian producing subsidiary of Standard Oil Company of New Jersey, and Fritz Kaselitz, chief geophysicist at the European head office of the company, were in Houston last week while on an inspection trip through Gulf Coast fields and other fields.

GEORGE ECHOLS flew from Houston to Hollywood, Florida, March 31 to visit his son, George Echols, Jr.

FRED OGLESBY has been promoted to head the land department for British American Oil Company at Tulsa, his territory including the Mid-Continent, Missouri, and Illinois. Oglesby succeeds H. A. Ecklund, who has been transferred to Houston to open a Texas office.

LEO R. FORTIER, formerly division geologist in Kansas for Shell Petroleum Corporation, has returned to Wichita from California and has opened an office.

HARRY LAYMAN, Deep Rock Oil Company scout, has returned to Wichita to cover the Kansas activity.

DR. DONALD C. BARTON, Humble Oil & Refining Company, presented a paper, "Correlation of Gulf Coast Crude Oils," at the April 4 meeting of the Gulf Coast section, American Institute of Mining and Metallurgical Engineers, in Houston.

E. E. McDERMOTT, president of Geophysical Service, Inc., Dallas, Texas, addressed the Houston Geological Society April 6 on "Concentration of Hydrocarbons in the Earth." McDermott presented a new theory on the origin of oil and gas fields, basing it upon several months of soil analysis experience.

A. E. DUNSTAN of London, chief chemist of Anglo-Iranian Oil Company, Ltd., is expected to return to headquarters in mid-April from the Far East, after which he plans to attend several important technical meetings in the United States.

J. A. JAMESON, London, general manager of the production department of Anglo-Iranian Oil Company, and N. A. Gass of the executive department, have been named directors of the company.

HORACE C. FITZPATRICK, assistant to the chairman of the board, Sinclair Prairie Oil Company, will resign that post April 15 to form a drilling contracting partnership with John Mabee, head of Mabee Consolidated Corporation of Tulsa. Fitzpatrick, who has been associated with Prairie and Sinclair interests for 25 years, will make his headquarters at Houston.

JOHN L. COULTER, vice president and one of the original organizers of the Oil Workers' International Union, CIO affiliate, was elected president April 5 by the executive council, which met in Fort Worth headquarters. He succeeds Harvey C. Fremming, who resigned because of ill health after being head of the organization for 19 years.

A. R. THOMPSON is chairman of the Petroleum Dinner Club which was organized at Mattoon last week to promote good fellowship and cooperation in the Illinois oil fields. T. I. Darland is secretary-treasurer, and others active in the organization include R. M. Payne, E. F. Stratton, W. W. Keeler, P. M. Youngmeyer, T. E. Grace, P. E. Romine, S. Crites and J. B. Whisenant.

T. A. MORGAN, conservation director, Kansas, visited in Tulsa last week.

W. S. MORRIS, chairman of East Texas Engineering Committee, was a visitor in Tulsa.

TAX KING, scout for Transwestern Oil Company, Oklahoma City, was in Tulsa contacting other operators last week.

O. P. GARLAND, transportation foreman at Humble Oil & Refining Company's Gulf Coast terminal, was honored at a dinner given by fellow employees in Houston April 3 as he retired after 17 years with the company.

HERBERT JONES, D. C. Chorpening and Frank Slavik last week organized the G. & R. Oil Company as a pipe line firm with headquarters in Houston.

ARNOLD TRAVIS and Mark Ulmer, of Southport Petroleum Corporation, Texas City, Texas, were in Henderson, Kentucky, last week looking over the possibility of establishing an office in that city.

DR. L. R. LAUDON, professor of geology at the University of Tulsa, addressed the Kansas Geological Society meeting at Wichita last week on the "Mississippian Stratigraphy of North America."

FRED WALLACE, J. E. Groce and W. M. Groce last week organized the Texas Gulf Minerals Corporation. Headquarters have been established in San Antonio.

W. F. REID, A. C. Droegemueller and V. J. Swenson last week organized Lake City Oil Company as an Illinois corporation. The firm has opened offices at 105 West Adams Street, Chicago.

W. C. BURNS, president of Richfield Oil Corporation, New York, declared the petroleum industry has become nothing more than a tax collecting agency for the government, during an address delivered at Philadelphia last week.

THORTON WASSON, chief geologist for Pure Oil Company, now on an extensive field trip in Oklahoma and Texas, was forced to cancel delivery of his paper at the spring meeting of the Eastern District, American Petroleum Institute Division of Production, held in Pittsburgh last week.

L. R. WILHITE, Grover Geiselman, Jr., and F. B. Delafesse last week organized Trendoil Corporation with headquarters in Houston.

A. E. ROSCOE, Texas operator who has production in the Blackwell pool of Henderson County, Kentucky, was in Henderson last week. His headquarters are in Marshall, Texas.

JOHNSON deFOREST, nephew of Henry W. deForest, who died last year after having served as director of Tide Water Associated Oil Company since its organization, is the choice of the company's proxy committee to fill the two-year un-

expired term of his uncle. The company's annual meeting will be held in New York May 4.

The committee has also indicated its intention to vote for re-election of the following eight directors, whose terms normally expire: Alden Anderson, George Armsby, L. F. Bayer, Samuel A. Bishop, B. I. Graves, L. D. Jure, Noel Robinson and Edward H. Salrin. The election will be for three year terms.

KEITH A. SPITZNAGLE, consulting geologist, has opened an office in the Grein Building at Evansville, Indiana.

T. M. LUMLY, Ray Simmons and W. D. Richardson last week organized South Plains Pipe Line Company as a Texas corporation carrying a capital stock of $25,000. Headquarters are at Levelland.

WILLIAM E. BRUBECK, Texas geologist recently working in the southern Illinois basin area, told an Evansville civic group last week that estimated ultimate production of 5000 to 7000 barrels per acre in the deepest part of the basin is "conservative," while in the Salem field "ultimate production of oil per acre is estimated as high as 25,000 to 30,000 barrels."

JOHN P. ROBERTS last week assumed his duties as assistant director of the oil and gas conservation division of the Kansas corporation commission. He held that position prior to 15 months ago, when he resigned to become assistant manager of the Kansas Independent Oil & Gas Association.

F. E. TUCKER, J. B. Cowden and Warren Clark last week organized the T. C. C. Oil Company. Headquarters have been established in Dallas.

W. A. "BILL" MARTIN, district land man in Kansas for The Texas Company, has been appointed district land and lease man for Illinois, Indiana and Kentucky, succeeding J. W. Russell, who has resigned to become an independent operator. Martin will make his headquarters in Mattoon.

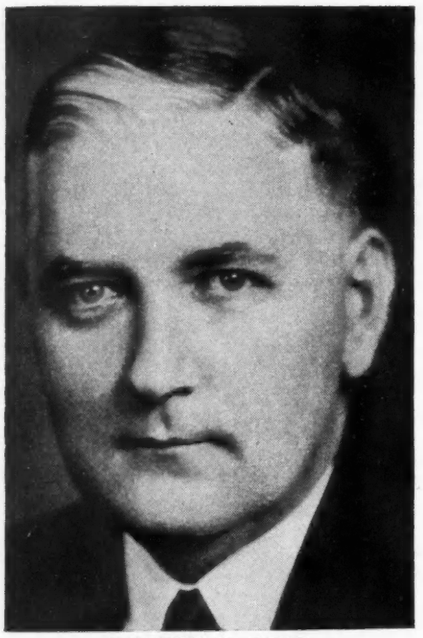
C. B. SMITH, petroleum engineer of Chicago, was expected in Calgary last week for a study of Alberta fields.

W. S. HERRON, Calgary, was re-elected president and managing director of Okalta Oils, Ltd., Turner Valley operating company, when shareholders and directors held their annual meetings last week. Other officers are R. W. Ward, vice president; Fred Whitaker, secretary-treasurer, and H. K. Reed, L. H. Fenerty and Robert Wilkinson, directors.

E. B. COOLIDGE, LaRue Smith and Del Lowry are directors and incorporators of The Montana Corporation, which was organized last week with headquarters in Great Falls. The firm is capitalized at $50,000.

J. A. LaFORTUNE, vice president of Warren Petroleum Corporation and president of Natural Gasoline Association of America, returned to his Tulsa office last week following a trip to Mexico, New Mexico and Texas.

C. M. HAMILTON, treasurer and manager of York State Oil, Inc., Ripley, New York, inspected the company's properties in Kansas last week while en route from San Francisco to his home.



DEWITT T. RING

Elected Chairman, A.P.I. Division of Production, Eastern Division

M. P. STEWART, C. J. Siemoneit and Lelia Mae Siemoneit last week organized Stewart & Siemoneit, Inc., as a drilling contracting firm. Headquarters have been established at Fort Worth.

O. F. BEATTY and W. B. Jackson are in charge of an office opened last week by Magnolia Petroleum Company in the Metropolitan Building, Evansville, Indiana.

J. M. (JACK) LOFFLAND, drilling contractor; Bert Weekely, president of Weekely Oil Corporation; George Calvert and George Fagg, independent operators, departed from Fort Worth late last week by train for Seattle, where the quartet will board ship for Alaska for a Kodiak bear hunt.

WILLIAM K. HALL, attorney for The Texas Company, Houston, for the past 18 years, has resigned to join the legal staff of the Texas Pacific Coal & Oil Company, Fort Worth.

CLAUDE BELL, chairman of this year's oil men's show at Seminole, Oklahoma, last week announced the event for May 10. Attendance will be limited to oil men, and politicians will be barred, he said.

J. H. WALKER, who has been scout for Sunray Oil Company in the Seminole area, Oklahoma, has been transferred to Corpus Christi. The post in Oklahoma has been taken over by Gentry Elston, who has been covering the West Texas area out of Odessa. He has Oklahoma headquarters at Ada.

R. S. McFARLAND, vice president of Seaboard Oil Corporation, Dallas, has been designated as the Texas agent for Vaughan Gas Process, Inc., a new corporation formed to license patent rights on a method of recovery of condensate from gas-distillate wells. The above concern and Tide Water Associated Oil Company control the patents.

D. T. Ring elected chairman of Eastern District of A.P.I.

D. T. Ring, Preston Oil Company, Columbus, Ohio, was elected chairman of the Eastern District of the American Petroleum Institute, Division of Production. I. W. Hartman, Gordon Oil Company, Mt. Pleasant, Michigan, was elected secretary and treasurer, at the annual meeting of the district at Pittsburgh, April 4 and 5.

Serving as district vice chairmen are to be the following: R. W. McIlvain, Jr., The Pure Oil Company, Olney, Illinois; T. H. Myers, Carnegie Natural Gas Company, Pittsburgh; J. J. Schmidt, East Ohio Gas Company, Cleveland; J. A. Thompson, Belmont Quadrangle Drilling Company, Bradford, Pa.; O. W. Van Patten, Columbian Carbon Company, Charleston, West Virginia.

Christy Payne, Jr., Peoples Natural Gas Company, Pittsburgh, was named chairman of the advisory committee, which includes J. C. Askam, The Ohio Oil Company, Findlay, Ohio; H. D. Atha, Gordon Oil Company, Mt. Pleasant, Michigan; A. H. Bell, Illinois State Geological Survey, Urbana; William Bell, Bell Brothers, Robinson, Illinois; F. A. Benckert, Peoples Natural Gas Company, Pittsburgh; S. J. Brendel, S. J. Brendel Oil & Gas Company, Pittsburgh; F. M. Brewster, Belmont Quadrangle Drilling Company, Bradford; E. F. Clagett, The Pure Oil Company, Saginaw, Michigan; P. H. Curry, South Penn Oil Company, Pittsburgh; Forest D. Dorn, Forest Oil Corporation, Bradford; F. E. Eckert, Honley & Bird, Bradford; K. C. Heald, Gulf Oil Corporation, Pittsburgh; D. S. Keenan, Carnegie Natural Gas Company, Pittsburgh; W. L. McCloy, Ohio Fuel Gas Company, Columbus; J. G. Montgomery, Jr., United Natural Gas Company, Oil City, Pa.; J. H. Newlon, Equitable Gas Company, Pittsburgh.

Also E. V. O'Rourke, Ohio State University, Columbus; S. J. Pirson, Pennsylvania State College, State College; John Post, Oil Well Supply Company, Oil City; Paul H. Price, State Geologist, Morgantown, West Virginia; C. C. Reed, Hope Natural Gas Company, Clarksburg, West Virginia; J. R. Reeves, Cities Service Companies, Buffalo, N. Y.; D. T. Ring; J. French Robinson, Peoples Natural Gas Company, Pittsburgh; Frank Schauer, Equitable Gas Company, Pittsburgh; E. N. Smith, Natural Gas Company, Pittsburgh; F. N. Speller, National Tube Company, Pittsburgh; Don Wilson, Columbia Oil & Gasoline Corporation, New York, and R. T. Zook, Sloan & Zook Company, Bradford, Pennsylvania.

West Coast A.P.I. expects big attendance

A record attendance is anticipated for the Annual Spring Meeting of the Pacific Coast District, Division of Production, American Petroleum Institute, to be held in Los Angeles, April 11.

Advance news of the annual banquet program for the evening session in the Los Angeles Biltmore Bowl has caused an early flood of ticket reservations.

M. L. de GUEVARA of Mexico City, assistant manager of production of Petroleos Mexicanos, left Houston for his headquarters March 29 after spending some time in the Texas Gulf Coast.

THE WEEK'S NEWS SUMMARIZED

Allowables

Following a series of petitions and public hearings protesting the Texas Railroad Commission allowable order for April, many of the reductions handed out to Southwest Texas, West Texas and the Gulf Coast were restored and others were in prospect.

The latest order, the third one issued by the commission for April, sets a net allowable of 1,386,000 barrels daily for the state. This is still 26,000 barrels under the Bureau of Mines' estimate of Texas consumer demand, although it is approximately 138,000 barrels higher than the order issued March 30.

The new Texas proration order left the lifting of the Saturday shutdown in force, but granted higher allowables to some fields.

Legislators of the state joined with oil men in protesting the March 30 order, which lifted Saturday shutdowns and drastically curtailed production in Southwest, West and Gulf Coast districts. One court suit resulted in a 10-day restraining order.

The situation was described to the commissioners by some of those protesting the cuts as being "so serious it means abandonment of" many fields.

Pipe Line

Pipe line construction took a big spurt, as Socony-Vacuum Oil Company announced definite plans for a 360-mile 10-inch line and other concerns made known plans for expansion.

The Socony-Vacuum line, largest project of 1939, will extend from Wood River, Illinois, to Lima, Ohio. This will provide a more direct route from the Mid-Continent and Illinois to refineries in Michigan and New York. The system will have a capacity of 40,000 barrels daily, and is scheduled for completion August 1. Eight or more main line pump stations are expected to be erected.

Another outlet is to be provided for the K-M-A field of North Texas. Sinclair Refining Company will construct a 65-mile 6-inch line from the field to its Hensley station in southern Jack County. The project is to be completed within 60 days. A capacity of 10,000 barrels daily is planned.

Standard Pipe Line Company is to build an eight-inch line from Haynesville, La., to the Magnolia, Village and Buckner fields in Arkansas.

Other minor pipe line work was announced during the week also.

Statistics

Encouraging was the reduction of gasoline stocks during the week ended April 1. The withdrawing of 300,000 barrels left 87,277,000 barrels of gasoline in storage. Although this was 5.4 percent smaller than the supply a year ago, it was about 7,000,000 barrels more than economists consider desirable.

Gas and fuel oil stocks were reduced over a million barrels to 127,893,000 barrels, and are only 3.3 percent larger than a year ago.

Crude stocks increased 600,000 barrels, rising to 273,915,000 barrels, but are still 11 percent smaller than at this time last year.

Legislation

Michigan's conservation act, which passed the house by a 79 to 8 vote, is expected to report out for vote in the senate by April 15. It is expected to get favorable action from the house, despite protests from independent operators in the southwestern part of the state.

An oil conservation act has been introduced into the Pennsylvania legislature. It was drafted by the Central Pennsylvania Oil Producers Association, and would create a three-member commission named by the governor with power to restrict oil production where there is danger of output in excess of reasonable market demands.

Complying with requests from the Southwest, the Senate Interstate Commerce Committee has agreed to hold a hearing April 11 on that provision of the Wheeler transportation bill prohibiting pipe line companies from transporting any oil in which they have an interest.

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Allowable Picture

Texas again revises April allowable . . . Protests bring partial restoration of Southwest, Gulf Coast and West Texas cuts, raising state 250,000 barrels

Cuts partly restored to some Texas fields

A series of petitions and public conferences protesting the Texas Railroad Commission allowable order for April resulted in many upward revisions that partly restored reductions in Southwest Texas, West Texas and Gulf Coast fields.

As soon as the order of March 30 became public, and operators in the Gulf Coast, Southwest Texas and West Texas discovered how drastically their quotas had been reduced, oil men swarmed into Austin attempting to obtain adjustments.

The commission first issued an order on March 21 fixing April allowables at the old March figures and lifting the Saturday shut-down. When operators protested that this allowed too much oil, Sadler and Smith, two of the commission members, got together and issued another order on March 30, cutting allowances of many fields in the Gulf Coast, Southwest Texas and West Texas. This plan brought another storm of protests, and early last week the commission held two conferences with oil men. This resulted in allowables of 86 fields in the districts cut being revised upward. The next step took place April 7, when a signed order was issued that raised allowables of still other fields in these areas.

Presumably the latter order is the one to remain in effect throughout April, although there is no reason why Commissioners Sadler and Smith would not have still another change of heart and revise allowables again if they see fit to do so.

On the basis of information released late Friday by the Railroad Commission, the state's basic or gross allowable is estimated at 1,798,217 barrels. On this basis the state would produce a daily average close to 1,500,000 barrels (considering the 5 shut-down Sundays). This figure compares with the Bureau of Mines estimate of 1,412,000 barrels for consumer demand from Texas, and is practically to the 1,513,000 barrel daily average established in the March 21 order which caused so much protest.

The first change came on Saturday, April 1, when the commission increased the allowable in the Yates field from 6127 barrels to 20,000 barrels daily, and raised the per well allowable in the Old Ocean field from 100 to 250 barrels daily.

In both instances the operators had planned to file suit but the Yates case was abandoned apparently, although Harrison and Abercrombie attacked the Old Ocean order, despite the increase.

On Monday conferences were held on several other fields and although the commission at first announced that these conferences would be held privately, they were made public after some 30 members of the legislature from the districts affected came before the commission, demanding an open meeting.

A similar conference was held on

Texas Allowable Changes by Districts, as of April 7, 1939

	DISTRICT	March 21	April 1*
9	North Texas	117,654	115,243
7-B	West Central	36,992	
7-C	West Central	30,389	66,818
8	West Texas	265,654	226,740
5	East Central	30,301	
6	East Central	91,136	121,066
1	Southwest Texas	41,197	
2	Southwest Texas	76,618	
4	Southwest Texas	219,087	297,299
3	Gulf Coast	285,200	249,930
10	Panhandle	88,996	87,275

* Allowables retroactive to April 1.

The above figures do not include 522,603 barrels from East Texas field.

A conference at Austin on April 4, when members of the state legislature and oil men appeared before the Texas Railroad Commission to protest against cuts in allowables made in Southwest Texas, West Texas and Gulf Coast fields. Commissioners seated left to right are: Colonel E. O. Thompson, Chairman Lon Smith, and Jerry Sadler. Later a part of the reductions were restored, as Texas' state allowable was raised considerably from its original quota for April.

Tuesday, and although no legislators appeared at the Monday session, they attended Tuesday and voiced their disapproval of the railroad commission's action.

The legislators inquired why the order was issued, what system it was based on and whether the commission intended to continue in effect an order that they said destroyed markets and put men out of work.

"The situation is so serious it means abandonment of those fields (around Corpus Christi) and moving out . . . if it's a good rule, it's good for all fields. If the system is different we want to know the rule, and know why the rule," declared Representative Elmer Pope of Corpus Christi.

"My people are in a panic. Our crops are a failure and we're depending on oil," said Representative Paris Smith of Matagorda County.

"One refinery phoned it had had to shut down. Another company was planning to drill four wells and has had to abandon them."

This was the general tenor of the remarks, and only Senator Joe Hill from the East Texas oil field found the commission order good and declared that his section approved of it heartily.

A hundred men attended the conference Monday and about 75 operators besides legislators attended the Tuesday meeting.

The commission finally requested that every applicant file a statement in writing in order that the commission might be fully and accurately informed.

In a statement issued after the first meeting, Commissioner Jerry Sadler said:

"There are more than 80,000 oil wells in Texas and they continue to increase, which make adjustments as between wells and between fields necessary in order that none are discriminated against.

"The railroad commission owes its duty to the oil industry as a whole and not to any specific field.

"The industry itself must admit that the more wells drilled and the more special allowables ordered, the more the discrimination and the harder the commission's problem to serve all fields and operators with fairness.

"One section of this state appeals to the commission as much as any other. There have been complaints covering a

Texas Allowables Changes in Southwest, West and Gulf Coast

Under Order of April 7

Below are the final figures on the order. Since fields are to operate six days, to obtain the true allowable the figure shown should be multiplied by 25 and divided by 30.

Under the old allowable it was necessary to multiply by 23 and divide by 31, as fields were open only five days weekly. The result of these calculations indicates increases for many fields in the net allowable assigned.

DISTRICT 1—SOUTHWEST TEXAS

	Barrels
Ezell	3,872
Larrimore	43
Luling Branyon	11,927
Matthews	24
Salt Flat	6,544

DISTRICT 2—SOUTHWEST TEXAS

Dirks	2,315
Francitas	75
Ganado	44
Greta	7,136
Jeyser	12,649
Hordes Creek	30
Keeran	844
Mellon Creek	344
La Rosa	2,133
Mauritz	70
McFadden	2,528
Mission River	396
O'Connor McFadden	120
Oakville	543
Placedo	7,906
Placedo East	360
Plumer	314
Sew Refugio	3,822
Refugio Fox	724
Old Refugio	1,138
Tom O'Connor	15,498
Tuleta	273
Tulsita	18
Vanderbilt	35
West Ranch	219
White Creek	25

DISTRICT 3—GULF COAST

Amelia	3,424
Anahuac	9,625
Armor	132
Beaumont West	1,450
Barbers Hills	9,507
Batson New	1,447
Bammel	60
Batson (old)	964
Bay City	2,410
Big Creek	625
Blue Ridge	1,190
Boling	1,939
Buckeye	105
Cedar Point	797
Chriesman	33
Clam Lake	132
Clear Lake	372
Cleveland	388
Clinton	216
Cotton Lake	264
Cotton Lake (South)	1,700
Conroe	33,075
Danbury Dome	595
Dickinson	5,280
Esperson Dome	1,275
Esperson Dome (South)	35
Fannett	570
Eureka	1,000
Eureka (deep)	80
Fairbanks	9,248
Gillock	4,358
Goose Creek	2,058
Hammon	2,297
Hankamer (old)	1,031
Hankamer, New	280
Hardin	8,002
Hastings	21,595
High Island	2,004
Hull, Old	2,887
Hitchcock	960
Hull, New	6,446
Joes Lake	1,200
Humble	3,771
Livingston	2,092
Kubela	712
League City	429
Lovells Lake	226
Lochridge	2,408
Lost Lake	135
Louise	1,377
Magnet	925
Manville Miocene	5,368
Manvell Oligocene	5,303
Markham	2,240
Markham North	80
Mykawa	168
Mykawa New	692
Nome	1,470
Old Ocean	6,750
Orange, Old	654
Orange, West	1,155
Pickett Ridge	1,219
Pierce Junction	3,931
Port Neches	1,034
Port Neches, West	91
Rossyn	40
Satsuma	394
Schwab Wilcox	40
Seabreeze	295
Segno	1,879
Segno Deep	1,019
Silsbee	1,400
South Houston	3,783
Spindle Top	2,247
South Liberty	584
Sugar Land	3,840
Thompson	12,962
Tomball	9,688
Turtle Bay	1,085
Webster	7,245
West Columbia	2,113
West Columbia New	3,819
West Columbia Vicksburg	34
Withers and Five Corners	4,205
Willow Slough	470
Caplan	100

DISTRICT 4—SOUTHWEST TEXAS

Alfred	50
Tom Graham	687
Alice	4,056
Alta Mesa	525
Aransas	10,153
Baldwin	240
Benevides	12,390
Cedro Hill	60
Casa Blanca	609
Colorado	480
Clara Driscoll	2,549
Clara Driscoll So.	955
Conoco Driscoll	819
Comitas	1,035
Spiller-Corpus Christi	1,949
El Tague	551
Ascobas	1,537
Fitzsimmons	1,750
Flour Bluff	5,121
Government Wells	8,607
South Government Wells	4,601
Guerra	655
Hoffman	5,217
North Killam	65
Kelsey	278
Loma Novia	14,772
Longhorn	600
Luby	8,470
Lundell	803
Midway	315
Mirando Valley	659
Moca	220
O'Hern	6,842
Liedre Lumbre	1,401
Plymouth	14,626
Premont Prospect	388
Premont East	111
Rancho Solo	301
Richard King	740
Riverside	35
Sam Fordyce (North)	242
Sam Fordyce	2,828
Saxet	16,522
Saxet Frio	15,586
South Seven Sisters	694
Sullivan	35
Sullivan City	100
Sweden	202
Sun	525
Taft	2,586
East White Point	5,006
White Point	58
Tesoro	180
Turkey Creek	4,536

DISTRICT 8—WEST TEXAS

Bennett	4,618
Carter	50
Church-Fields	6,387
Cowden North	8,800
Cowden South	273
Cowden Crane	1,689
Dune	500
Dean	38
Deep Rock	204
Duggan	480
Emma	1,063
Emperor	1,422
Estes	7,441
Eaves	176
Foster	8,940
Fuhrman	1,682
Garza	24
Goldsmith	21,318
Gulf McElroy	3,968
Halley	474
Harper	8,950
Hendrick	11,549
Howard-Glascock	16,475
Itan-East Howard	6,874
Johnson	78
Jordan	3,097
Kermit	18,689
Keystone	2,068
Keystone Lime	1,934
Leck	145
Kayson	206
Masterson	530
Means	3,250
McClintic	1,193
Netterville	341
Northwest	109
Payton	3,175
Pecos Valley	375
Pecos Low Gravity	614
Sand Hills Permian	1,237
Sand Hills Ord	177
Scarbrough	2,443
Sealey	486
Seminole	640
Shearer	1,233
Slaughter	1,284
Snyder	2,451
Swinson	50
Taylor-Link	1,530
Tobarg	2,058
Waddell	1,286
North Ward	6,386
South Ward	10,753
Wasson	12,740
West	37
Wheat	1,487
Whitebaker	46
Yates	20,000
Pen Well	4,131

long period that various fields were being discriminated against, until it was necessary for the commission to take some action in readjustments.

"Should oil production continue on the same basis as in the past, in a few months the Texas oil market would be gone, and to save this situation, whereby all would lose, it was necessary for the commission to act, even if some here and there were dissatisfied.

"This is a statewide problem and not the problem of any one field.

"No group in the industry has been satisfied for a year or more, and the protests against the present order are merely in line with protests that have been going on, until it was necessary for the commission to set the house in order for a better start.

"The commission is forced to operate under the laws of Texas, and if there are too many wells and a feeling that the industry is not profiting as it should it is not the fault of the commission.

"Why some wells should produce less than 20 barrels a day and others in a different section be allowed to run up to 400 and even 800 barrels is almost on a par with the discriminatory freight rates with which Texas has had to contend.

"The oil industry shouldn't get panicky, for if so, things will not work out. It has been panicky before over many issues that arise, but it is as well stabilized now as any other industry.

New plan would restrict well flow to 250 barrels

Although the Emergency Curtailment Committee of California, headed by E. E. Pyles, concluded an intensive drive several weeks ago as an aid to further oil curtailment, a new plan for the consideration of oil operators of the state has been presented. The plan calls for a top allowable of 250 barrels daily for any well in California. This plan has been submitted to the oil producers of Long Beach Harbor and is also expected to be presented to the Central Committee for study within a week. Adoption of the plan, it is reported, is slated to discourage a price cut, or possibly enactment of a control bill now in committee at Sacramento.

Pipe Line News

Socony-Vacuum buying right-of-way for more direct line from Illinois to Michigan and New York plants . . . Sinclair is to build 65-mile line from K-M-A

Socony-Vacuum to build 360-mile 10-inch line

Right-of-way work has been started by Socony-Vacuum Oil Company, Inc., for the immediate construction of 360 miles of 10-inch crude oil pipe line from Wood River, Illinois, to Lima, Ohio, to attain a more direct route in supplying its refineries at Trenton, Michigan, and Buffalo, New York, with oil produced and purchased in the Mid-Continent and Illinois Basin areas by Magnolia Petroleum Company, a subsidiary.

The projected line will have a capacity of 40,000 barrels daily, and is scheduled to be completed by August 1, 1939.

Construction of the line and booster stations will be contracted, with Magnolia Pipe Line Company, an affiliated unit with headquarters at Dallas, Texas, supervising the installation. The latter is preparing specifications to be submitted to prospective bidders. The call for bids will not be issued until right-of-way has been selected and surveyed. An aerial survey of the general route of the line across Illinois, Indiana and a portion of Ohio has been completed.

The new line will serve the dual purpose of providing an adequate outlet for the prolific properties being developed by Magnolia Petroleum Company in the Illinois Basin and to curtail the need for outside transportation facilities in delivering this oil and that originating in the Mid-Continent to the above refineries.

Mid-Continent crude consigned by Magnolia Petroleum Company to the plants is gathered by Magnolia Pipe Line Company and delivered to Sinclair Refining Company, pipe line division, at the latter's Panova station, near Shawnee, Oklahoma. This common-carrier movement is routed via East Chicago, thence through connecting lines in reaching the Trenton and Buffalo refineries.

Upon completion of the new line, the Mid-Continent shipments will be routed via Sinclair Refining Company's Wood River branch thence through Socony-Vacuum Oil Company's facilities to Lima, where connection will be made with Buckeye Pipe Line Company and in turn with New York Transit Company.

Bulk of the crude movement from the Illinois Basin will originate, according to present plans, in the Salem-Lake Centralia district, Marion County. Magnolia Petroleum Company installed late last year a 20-mile 3- and 8-inch gravity gathering system, with an 8-mile 6-inch discharge line, rated at 15,000 barrels daily, extending northwest to Sandoval, where connection is made with Illinois Pipe Line Company's system. A substantial portion of the field runs have been routed through the latter to Wood River, thence south to Socony-Vacuum Oil Company's plant at East St. Louis. More recently surplus oil has been diverted to Standard Oil Company of Indiana in exchange for a like volume of East Texas crude tendered Magnolia Petroleum Company's Texas plants.

This field system will be extended 10 miles north from Sandoval to connect with the 10-inch carrier at Patoka, northwestern Marion County. A main line station will be erected at Patoka.

The tentative working schedule setup for the Wood River-Lima carrier calls for pipe stringing, ditching and welding to commence simultaneously at several points on May 1.

Eight or more main line stations are under consideration. Centrifugal pumps will be utilized. Power for these units will be furnished by Diesel engines or electric motors.

Socony-Vacuum Oil Company probably will designate another name for the operation of the 10-inch carrier. Magnolia Pipe Line Company of Illinois, a unit of Magnolia Petroleum Company, was formed last November to acquire and operate a 24-mile 6-inch line, including 8/10-mile of 8-inch pipe, from Mitchell, located 5 miles south of Wood River, to East St. Louis. This stub line was purchased from Sinclair Refining Company, pipe line division, and has made direct connection with the Wood River terminus of Illinois Pipe Line Company. It will be tied into the new 10-inch carrier.

Standard will build line to serve Arkansas areas

Standard Pipe Line Company's eight-inch welded line from Haynesville, Louisiana, to the Magnolia (Kerr-Lynn), Village and Buckner oil fields in Columbia County, right-of-way for which was purchased last year, will be built at once, it was officially announced last week. There will be four-inch laterals to the Buckner and Village fields for the present and the eight-inch main line will connect at Haynesville with other Standard trunk lines. The line will give Magnolia two lines but will be the first for the other fields, where Standard Oil Company of Louisiana is main operator and where it has been taking the oil but moving it by truck and tank car.

Line will give K-M-A 10,000 barrels additional outlet

Transportation and market relief for the high-gravity oil produced in the K-M-A deep area will be provided by Sinclair Refining Company, pipe line division, through the construction of its second outlet that will have a capacity of 10,000 barrels daily.

Authorization has been made by the company for the immediate construction of a 65-mile 6-inch welded line to extend southeast from its Mangold field station, NEc Block 38, P. Castleman Survey, A-35, Wichita County, to Hensley station, south central Jack County. The latter is the junction point on its Ranger-Oklahoma multiple carrier and a looped line that extends via Mexia to Houston. The oil will be consigned to the company's refinery at Houston.

Right-of-way survey began April 4, and contracts for the construction will be awarded within 10 days. The project is to be completed within 60 days.

The new line will be routed via the company's Archer station, NE SW Sec-

tion 23, A.T.N.C.L. Survey, Archer County, and within a mile southwest of the Hull-Silk deep field, thence to Predo station, located in southeast corner of Archer County. The above two stations are on the company's North Texas system that traverses a circuitous route in moving oil from Wichita, Archer, Young and Jack counties into the Ranger-Oklahoma system at Graford station, Palo Pinto County. Additional pumping units will be added to the K-M-A, Archer and Predo stations.

Crude runs from the K-M-A field by Sinclair Refining Company have been restricted to its available capacity, amounting to an aggregate of 60,000 barrels monthly. An additional 8000 barrels daily is the goal of the Sinclair Prairie Oil Marketing Company, crude buying unit, from the K-M-A sector. The company may recall well connections, aggregating 2000 barrels daily, that were recently turned to The Texas Pipe Line Company through an exchange that involved East Texas crude. There are approximately 30 wells at K-M-A without a market, and there are 29 tests drilling or in process of completion.

Building 18 miles of 6-inch to Lovington

Transportation outlet for the Lovington pool, Lea County, New Mexico, is to be provided by The Texas-New Mexico Pipe Line Company, which has surveyed right-of-way for the construction of an 18-mile 6-inch extension line from the Monument field.

Humble rearranging line in Central West Texas

Humble Pipe Line Company is building 25 miles of 2-inch line from the Woodson district, Throckmorton County, which will gather oil into the Albany station for transportation to Comyn via Fambrough station. This rearrangement of its West Central Texas gathering system will provide a more direct movement and permit the removal of 18 miles of 6-inch pipe.

Socony-Vacuum will build 13-mile, 4-inch oil line

Socony - Vacuum Oil Company will construct a 13-mile, 4-inch pipe line to connect the Big Muddy field with its White Eagle refinery at Casper, J. W. Glass, refinery superintendent, announced last week. Rights-of-way were being secured last week, and it was planned to let the contract this week.

Plan movement by barge up river to Omaha

Socony-Vacuum Oil Company will begin movement of its products by barge from Kansas City to Omaha this spring, the first experimental shipment to be made about June 1, R. B. Irwin, executive of the White Eagle division of the company at Kansas City, announced last week. The company has been shipping by barge downstream from Kansas City for two years.

Oil at the Capitols

Senate committee agrees to hold pipe line divorcement hearings April 11 . . . Oil conservation acts before both Pennsylvania and Michigan legislatures

Senate to hold hearings on pipe line divorcement

Complying with requests from the Southwest, forwarded through Senator Tom Connally of Texas, the Senate Interstate Commerce Committee will hold a hearing April 11 on that provision of the Wheeler transportation bill prohibiting pipe line companies from transporting any oil in which they may have an interest.

The interests at whose request the hearings have been called are opposed to the legislation, but the committee also will hear proponents although it has served notice that it will not permit lengthy sessions, since it is desired to send the bill on its way to the floor with as little delay as possible in the hope that enactment may be secured before the end of the session.

Under the bill it would be unlawful, after December 31, 1940, for any pipe line company to transport any product in which it had any interest, direct or indirect, except such commodities as may be necessary or intended for use in the conduct of its business. The bill makes no effort to designate how divorce of pipe line transportation from other branches of the industry would be accomplished. Natural gas lines are specifically excluded.

Because of the bitter controversy which would be precipitated by any attempt to secure divorce legislation, it is anticipated that this section of the bill will be deleted before the measure is reported to the senate.

Pennsylvania oil conservation act introduced in legislature

Formal introduction of a proposed Pennsylvania oil conservation act, drafted by the Central Pennsylvania Oil Producers Association, was made in the state legislature at Harrisburg April 3 by Representatives John H. McKinney, Republican of Venango County, and A. O. Hindman, Democrat of Washington County.

The bill would create a three-member commission named by the governor with power to restrict oil production in certain state fields where there is danger of production in excess of reasonable market demands, to limit production in fields where overproduction in one pool might tend to cause abandonment of wells in other pools, and to prohibit production, sale or transportation of oil produced in violation of proration orders.

Members of the commission "shall preferably be persons thoroughly familiar with the production of oil in the commonwealth," according to provisions of the bill, "and shall be appointed as follows: One from the Bradford oil district, one from the southwestern Pennsylvania district, including Allegheny County, and one from the intermediate or central district."

Ten days' notice of a public hearing would be required before issuance of rules or regulations affecting production, except in an emergency when "an emergency rule or regulation may be issued and shall have the same validity as if a hearing had been held after due notice." The commission or any of its members would have the power of subpoena.

Administration of the act would be financed by an annual tax of one fifth of a cent on every 42-gallon barrel of oil produced in the state, the monies to be paid into an oil conservation fund.

Michigan control law expected to pass

Michigan House Bill 139 (oil conservation act) which passed the house by a 79 to 8 vote, is expected to be reported out for vote in the senate by April 15. The Senate Conservation Committee, headed by Senator Miles Callaghan, is to conduct hearings with oil operators during the next 10 days.

Chief opposition which has been voiced to the senate committee has come from representatives of Southwestern Michigan, who charge that the bill, if made a law, will freeze up the drilling play in the shallow area in so far as the little fellow is concerned. However, the bill has the support of both the Oil and Gas Association of Michigan, the Michigan Refiners Association, the Conservation Commission, and the administration.

Sponsors of the bill reported that Governor Lauren Dickinson was as strong for conservation and correction in Michigan's oil development program as was the late Governor Frank Fitzgerald.

Stelle explains statement on taxing oil properties

In an effort to clarify a statement made last month in which he suggested tax values high enough to force full development of idle leaseholds, Acting Governor John Stelle of Illinois last week declared that owners of oil and gas leases in non-producing areas of Illinois are expected to pay taxes amounting to about 15 cents an acre, while taxes on producing leases probably will range from $15 to $25 an acre.

"Because the Illinois supreme court

and the attorney general have held that oil and gas leases are taxable under the property laws of the state, there is only one course that the local boards of review can pursue and that is to assess such leases," Stelle declared. "The state tax commission has recommended to the various taxing boards of review that oil and gas lease holders in Illinois be assessed on the basis of $10 per acre for undeveloped leases and $1000 per acre on producing leases.

"The assessment on the producing leases would apply to the 20 acres surrounding each producing well," Stelle explained. "In other words, a leaseholder who has 160 acres under lease with one producing well would be assessed $1000 an acre on the 20 acres nearest the well and $10 an acre on the balance of the lease.

"Based on a 40 percent valuation and the present local tax rates in Illinois, this assessment would mean that the taxes to be levied on non-producing oil and gas leases would amount to approximately 15 cents per acre and between $15 and $25 an acre on producing leases. Such a rate would not be exorbitant. Property owners in the counties where oil and gas lease assessments are to be made will benefit by the added revenue to be derived from such assessments and the resultant lowering of taxes on other property in each county affected by this assessment."

Tax commission officials at Springfield indicated a meeting of southern Illinois assessors and oil company officials would be called shortly to discuss tax assessments.

Meanwhile, treasurers of Marion, Fayette, Clinton, Clay, Jefferson and Lawrence counties met at Salem last week in an effort to arrive at a uniform method of assessing oil properties, but no definite action was taken. Homer Lewellen, Marion County treasurer, has expressed himself in favor of a plan whereby only producing wells are taxed. The assessment would be based on the number of years the well has been producing and its average daily output. Taxing non-productive leases, Lewellen contends, would discourage development and eventually work a hardship on the farmers as lease holders would release much of their acreage rather than pay the tax.

Texas tax bills still stalemated

The Texas legislature this week made little progress on tax bills, but seemed determined to keep alive some measure that could be passed as a constitutional amendment to increase pensions and provide revenue to pay them.

Both houses were critical of the radio address delivered recently by Governor Lee O'Daniel who charged members with evading the issue and attacked them for their failure to adopt the plan he had submitted.

It seems likely that the final result will be a companionate sales tax and natural resource tax, but whether this will be prepared in the form of a statute or a constitutional amendment to be voted on later by the people, cannot be determined now.

Both houses seemed willing to liberalize pensions to some extent and they seemed equally determined to raise tax sufficient to meet the increase.

Market Situation

Operations in fields and refineries are fairly conservative, maintaining price strength, and in some instances recording gains in gasoline

Further gains made by gasoline prices

Prices in the oil industry have remained steady within the past week, and in some instances additional gains in gasoline prices have occurred.

Crude oil postings have remained generally unchanged, and no important revisions are indicated for the immediate future, as control of production promises to be effective in April, allowables being relatively strict in most of the leading producing states.

Revisions of gasoline prices during the past week included particularly the marking up of tank car quotations in the Chicago market, in compensation for similar increases previously made in the Oklahoma-Kansas refining districts.

There was also some further strengthening of the gasoline market in East Texas, minimum quotations having been advanced ⅛ cent a gallon.

Gasoline Prices

U. S. motor gasoline ranged in the Oklahoma market last week about as follows: 62 octane and below, 3⅞ to 4¼ cents a gallon; 63 to 66 octane, 4⅛ to 4⅜ cents; 67 to 69 octane, 4¼ to 4¾ cents; 70 to 72 octane, 4⅝ to 5 cents.

Corresponding prices in the Chicago market were 3¾ to 4⅛ cents, 3⅞ to 4 cents, 4 to 4½ cents and 4¼ to 4⅞ cents.

In East Texas, 60-62, 400 end point gasoline was priced generally at 4¼ to 4⅜ cents a gallon.

Natural gasoline, grade 26-70, was priced generally in the Mid-Continent markets, f.o.b. refineries at 2½ to 2⅝ cents a gallon, and sales were reported at 2⅜ cents f.o.b. Breckenridge, Texas.

Kerosene prices f.o.b. Oklahoma refineries ranged from 3⅞ to 4¼ cents a gallon for the 41-43 water white grade, and from 4 to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3½ to 4⅛ cents and 3⅝ to 4⅜ cents.

Fuel oil prices were mostly unchanged last week. In the Chicago market range oil was priced from 3⅜ to 4 cents a gallon. The No. 1 white oil was priced from 3⅜ to 3⅞ cents, and No. 1 straw from 3⅜ to 3⅝ cents. No. 2 straw was 3⅛ to 3½ cents. No. 3 oil was 3 to 3¼ cents. No. 5 oils were 57½ to 70 cents a barrel. The No. 6 oil was quoted at 35 to 45 cents.

Oil industry operating on conservative basis

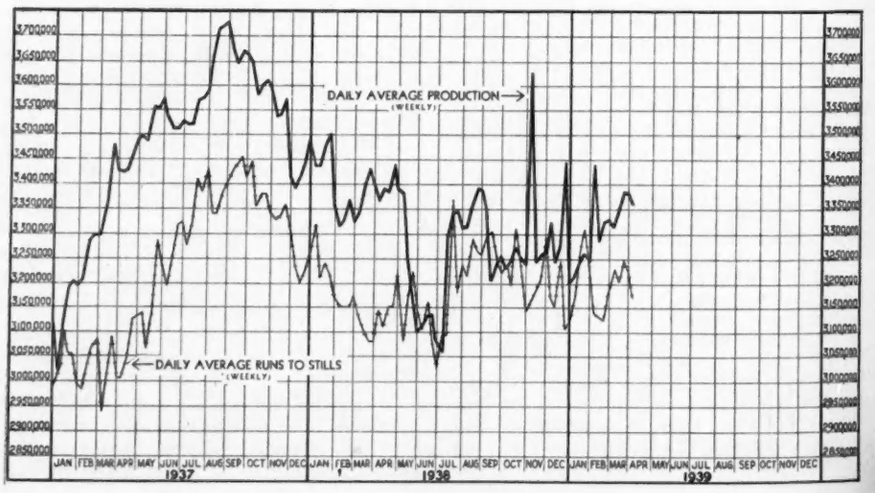
Continued moderate operations in the oil industry, in the oil fields, and at the refineries, were reflected in the latest weekly statistics.

Crude oil production has continued fairly close to market demand and was lower in the week ended April 1 than in the previous week. Crude oil runs to refinery stills were reduced materially during the week, and gasoline production was down, having resulted in a withdrawal from gasoline storage, whereas the stocks previously had been steadily increasing. Meanwhile, another substantial withdrawal was made from gas oil and fuel oil stocks.

Crude Output Down

United States crude oil production averaged 3,358,200 barrels daily in the week ended April 1. That was about 25,000 barrels a day less than in the previous week and about 18,000 barrels

United States Crude Oil Production and Refinery Runs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JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1938
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1939

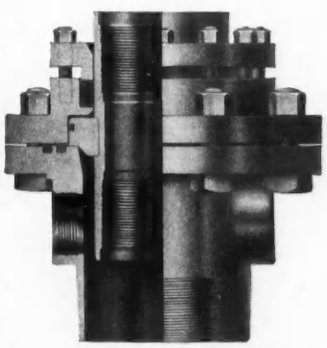
And When the Smoke Cleared Away Here's What They Found:

2 RECTORHEADS

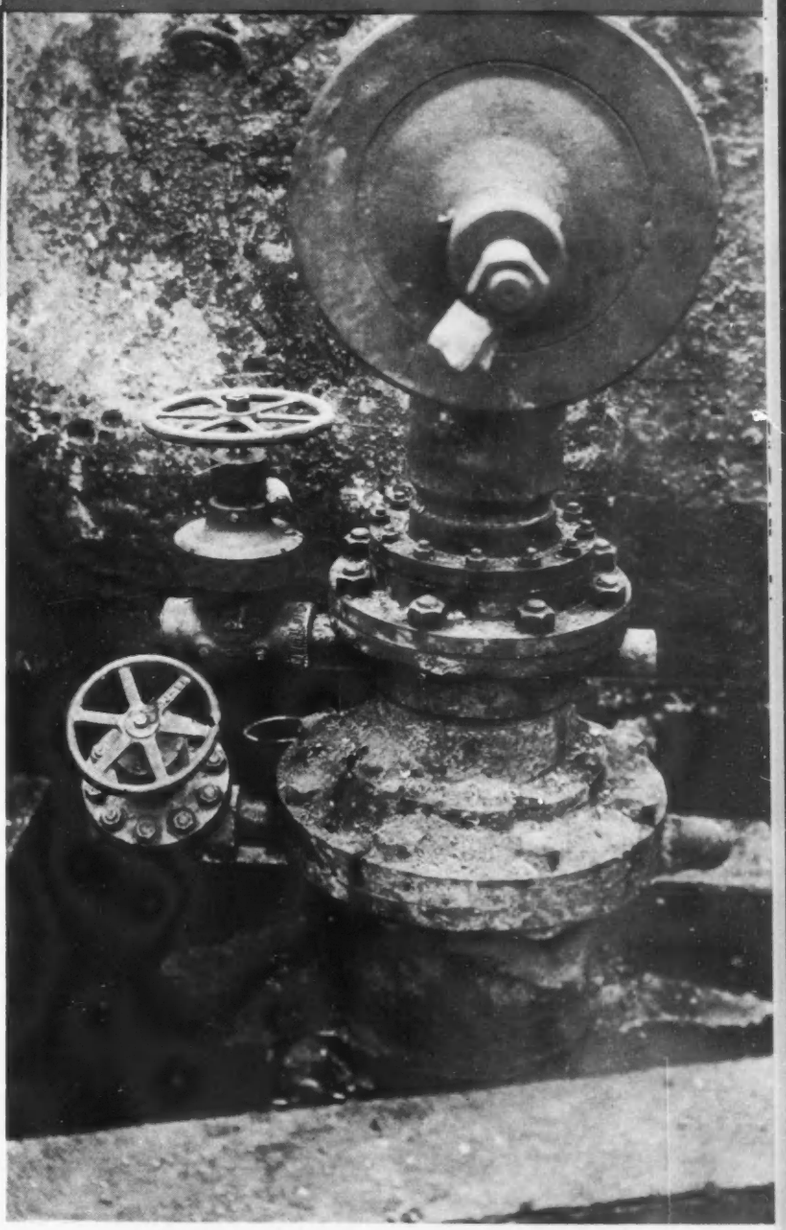
SAFELY SUSPENDING TWO CASING STRINGS—as though nothing had happened!

The true values of RECTORHEADS were again brought forcefully to light in a recent Gulf Coast blow-out and fire which completely destroyed all drilling equipment except for the two RECTORHEADS. Safe suspension by these heads of the surface and protection strings of casing through hours of roaring flames meant the saving of the well from cratering, and complete loss. Contrasted to such added tragedy, the operators were ready to move in another rig and continue drilling operations immediately after removal of the wreckage.

Completely enveloping the RECTORHEADS, the fire destroyed the hydraulic packing. But, with RECTORHEADS, this is an incident . . . not a tragedy, for this soft packing merely hermetically seals the slight escape of gas that may come from around the metal to metal seat, which is the primary packing element, or volume control medium, in RECTORHEADS. As soon as the wreckage was sufficiently cleared to permit access to the heads, the hydraulic packing was replaced.



Cut-away view of the Type "H" RECTORHEAD, 6,000 pound test, all hammer forged steel, the type which saved a crater by "holding everything" in the above unfortunate case. Note the ground joint or metal to metal seal provided by the exclusive split ring, and the two rings of soft packing outside, replaceable under highest pressures.



Photograph of the RECTORHEAD stack after the debris was removed. Note shipping tags on the new gate and flow-line valves, just replaced. This photo was made immediately following repacking of the top head and prior to repacking of bottom head.

RECTOR WELL EQUIPMENT CO., Inc.

HEADQUARTERS: Fort Worth, Texas. BRANCHES: Houston, Wichita Falls, Midland, Corpus Christi, Los Angeles, Tulsa, Shreveport, Casper.

RECTOR WELL EQUIPMENT CO. INC. RUGGED RELIABLE RECTOR RAPIDLY REPACKABLE FORT WORTH, TEXAS, U.S.A.

a day more than the indicated daily average market demand for March, although more than 50,000 barrels a day less than the estimated demand for April. It was 3/10 of 1 percent less than output in the corresponding week last year.

Runs to Stills Off

Crude runs to stills averaged 3,170,000 barrels daily in the week ended April 1, having been reduced 55,000 barrels from the previous week's daily average. The runs were 8/10 of 1 percent larger than those of the corresponding week last year.

Gasoline Situation

Gasoline production totaled 9,411,000 barrels in the week of April 1, compared with 9,423,000 barrels in the previous week.

Total stocks of finished and unfinished gasoline at refineries, terminals, in transit, and in pipe lines were reduced about 300,000 barrels during the week ended April 1, and then stood at 87,277,000 barrels. Although that total was 5.4 percent smaller than the supply on hand March 31 last year, it was about 7,000,000 barrels larger than economically desirable, economists having estimated that the beginning-of-spring stocks would be sufficient at about 80,000,000 barrels.

Fuel Oil Stocks Low

Gas oil and fuel oil stocks were reduced over a million barrels in the week ended April 1, having been brought down to 127,893,000 barrels. That total was only 3.3 percent larger than the supply held a year before, although fuel oil demand has been showing a substantially larger gain than that over a year ago.

Crude Storage Larger

Crude oil storage showed an increase of about 600,000 barrels in the week ended March 25, latest date for which figures are available, having risen to 273,915,000 barrels. The crude stocks are, however, 11 percent smaller than at this time last year. They are not far above the 17-year low of 269,509,000 barrels reached last December 10.

In the week ended March 25 the stocks of domestic crude oil increased 1,001,000 barrels, but the inventory of foreign crude declined 431,000 barrels.

Largely responsible for the increase in domestic stocks were gains of 801,000 barrels in Oklahoma, 468,000 barrels in East Texas, and smaller gains in several other districts, which more than offset withdrawals from storage in the Louisiana Gulf Coast, Texas Gulf Coast, California, the Rocky Mountain States, and Illinois.

Strength of gasoline is feature of market

The markets of the oil industry have continued generally steady, as the beginning of spring has given strength to the gasoline situation, which in turn has tended to bolster the crude oil market.

Allowables Are Strict

Although much controversy has occurred in Texas in connection with the setting of allowables for April, it has finally been indicated that the state's production will be within market demand during the month. Similarly, most of the other leading producing states also will adhere closely to the Bureau of Mines estimates of demand in regulating crude production in April. Consequently, the United States as a whole probably will not show any excess production during the month; and the crude market may be expected to remain stable.

Refinery Runs Conservative

The industry lately has been fairly conservative in regulating crude runs to refinery stills, and production of gasoline consequently has been held within reasonable limits, with the result that withdrawals of gasoline from storage were commenced in the week ended April 1, the stocks having come down about 300,000 barrels during the period, or to 87,277,000 barrels. At the corresponding time last year the gasoline stocks totaled more than 92,000,000 barrels. While the gasoline inventory is therefore 5,000,000 barrels smaller than a year ago, consumption of that product is running about 5 percent higher.

Nevertheless, the present gasoline inventory is larger than necessary by possibly 7,000,000 barrels, according to petroleum economists, and liquidation of that surplus this spring and summer would be economically desirable.

Gasoline Prices Up

The gasoline market for several weeks has been displaying firmness, and tank car prices have been improving. All grades have participated in the advance, and quotations are now ⅛ to ¼ cent a gallon higher than they were several weeks ago. Supplies are reported to be closely held by refiners.

Prices of kerosene and fuel oils have continued generally unchanged, although a few refiners have reported lowering quotations ⅛ cent a gallon on the light fuel oils.

New all-welded tanker has pure nickel holds

A novel ship, built in a novel way for a novel service has just completed her maiden trip between Oswego, N. Y. and Chicago.

She is the twin screw Diesel Ship Dolomite 4, 300 feet long and built to full ocean classifications under Lloyd's rating. She has a beam of 43 feet, 4 inches, a moulded depth of 20 feet, and a gross tonnage of 5,500. Made of electrically welded steel channels bent to form her main structure, she has no rivets. Forty miles of welding were required for her construction.

Built for bulk transportation of highly corrosive chemicals and other products along the Atlantic seaboard, Dolomite 4 has five main bulkhead cargo tanks lined with sheet nickel, which is spot welded to the frame and arc welded on the seams. Although tank trucks and tank cars have been constructed of nickel clad steel and fishing boats are now being built with nickel-lined holds to bring fresh fish in from the Atlantic, Dolomite 4 is said to be the first freight ship to feature nickel cargo tanks. More than 60,000 pounds of nickel were used for her main tanks.

The method of constructing the ship was also novel. Her keel was laid in a dry spur of the Erie Barge Canal at Pittsford near Rochester, N. Y. She was "launched" by syphoning water into the lock until she floated, but the traditional champagne was used when she was recently christened by Mrs. Henry Kondolf, of New York City.

The ship brought a bulk cargo of 1,000,000 gallons of "water-white" kerosene to Chicago. This is said to be the first time that water-white kerosene

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
September 25, 1937	3,666,300	*3,455,000	307,974,000	65,620,000	116,472,000
March 19, 1938	3,433,550	3,080,000	306,380,000	*93,192,000	122,067,000
March 26	3,405,600	3,080,000	307,557,000	92,858,000	122,969,000
April 30	3,396,150	3,215,000	307,147,000	91,339,000	128,270,000
May 28	3,098,650	3,150,000	301,583,000	87,946,000	134,315,000
June 25	3,083,900	3,025,000	293,463,000	82,412,000	137,801,000
July 30	3,316,400	3,240,000	288,514,000	76,864,000	144,294,000
August 27	3,388,500	3,255,000	285,029,000	71,754,000	146,926,000
September 24	3,251,150	3,220,000	280,278,000	68,605,000	150,468,000
October 1	3,231,800	3,235,000	280,852,000	68,602,000	151,759,000
October 29	3,237,500	3,145,000	275,824,000	67,590,000	153,719,000
November 12	3,243,250	3,180,000	273,394,000	67,551,000	*154,666,000
November 26	3,260,900	3,295,000	270,563,000	68,628,000	153,634,000
December 10	3,245,100	3,150,000	†269,509,000	68,587,000	150,779,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	144,823,000
January 28, 1939	3,248,250	3,235,000	271,763,000	77,279,000	139,349,000
February 25	3,328,850	3,185,000	271,758,000	84,597,000	133,671,000
March 4	3,314,850	3,230,000	272,971,000	85,379,000	131,930,000
March 25	3,382,350	3,225,000	273,915,000	87,561,000	129,915,000
April 1, 1939	3,358,200	3,170,000	.....	87,277,000	127,893,000
April 2, 1938	3,367,250	3,145,000	‡307,557,000	92,924,000	123,621,000
Change in past year	—0.3%	+0.8%	—11.0%	—5.4%	+3.3%

* All time peak. † Lowest for 17 years. ‡ Stocks, March 26, 1938.

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THE 1939 COMPOSITE CATALOG

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THE COMPOSITE CATALOG

SAVE TIME — Speed up your orders by referring to the item by page number in The COMPOSITE CATALOG

has ever been shipped in bulk by water, as it corrodes the metals usually used in cargo tank construction, thus becoming discolored.

On her second trip she carried kerosene to Chicago and gasoline from Chicago to Cleveland. On subsequent Lake trips, she will carry kerosene, gasoline, or grain, depending on available cargoes.

After entering deep sea service in November, she will carry lye between Lake Charles, Louisiana and Norfolk, Va. She will alternate her cargo in this service with molasses, oil, grain and other products.

Tom Graham rules

Twenty-acre spacing for wells in the Tom Graham (East Alice) field, Jim Wells County, was provided in an order issued by the Texas Railroad Commission last week.

Although wells may be drilled within 330 feet of lease lines, they must be 933 feet apart.

Proration is on acreage and per well with 50 percent allocated on each factor. As much as 30 acres may be assigned to the final well on a lease for proration purposes. The rules provide for a maximum gas/oil ratio of 2000/1 with a total displacement factor for high gas/oil ratio wells.

The commission requires 1000 feet of surface casing set with a minimum of 300 sacks of cement and an oil string set with the same amount of cement.

Crude Production

Increase of 65,853 barrels brings United States daily average up to 3,407,390 barrels for week

Crude oil production in the United States during the week ended April 8 averaged 3,407,390 barrels daily. Production at this rate exceeded by 65,853 barrels daily that of the week preceding. Bureau of Mines estimate of demand for domestic crude was only 26,610 barrels over actual production; as Texas, Louisiana, Oklahoma, and California turned in large gains but failed to meet the optimistic government prediction.

Production in Texas wavered with the state allowable and settled at a 1,346,000 barrel daily average as the six-day production week caused a 25,550-barrel gain over the previous week's output. Production was less than state and federal allocation by 39,500 barrels and 66,200 barrels respectively.

Louisiana lifted 269,000 barrels daily in gaining 7725 barrels daily over production the week previous and exceeding state allowable by 11,080 barrels and federal estimate by 7000 barrels.

Oklahoma production, at 452,250 barrels daily, was 30,050 barrels over that of the week prior, 32,200 barrels over state allowable, but 21,050 barrels short of bureau prediction.

California produced 625,300 barrels daily, gaining 13,600 over the previous week. State and federal recommendations were surpassed by 50,300 and 33,300 barrels respectively.

Kansas was the only major area to register a loss, dropping to 153,800 barrels daily; 13,202 barrels less than the preceding week. Production was 3050 barrels less than that permitted by the state, and 1100 barrels over bureau estimate.

Eastern States production at 266,790 barrels daily was slightly less than that for the prior week, as new Illinois pools failed to gain.

Production from other areas was close to that for the preceding week.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in April)	State Allowable in April	BARRELS DAILY FOR WEEK ENDED April 8	April 1
TEXAS—				
Texas Panhandle	.....	.....	74,400	65,100
North Texas	.....	.....	93,800	80,450
West Central Texas	.....	.....	34,200	30,600
West Texas	.....	.....	200,200	209,650
East Central Texas	.....	.....	98,700	95,850
East Texas Field	.....	.....	439,500	373,050
South Texas	.....	.....	210,600	248,200
Texas Gulf Coast	.....	.....	195,100	218,050
Total Texas	1,412,700	1,386,000*	1,346,500	1,320,950
CALIFORNIA—				
Long Beach	.....	.....	49,200	48,600
Santa Fe Springs	.....	.....	27,600	28,100
Huntington Beach	.....	.....	28,800	27,500
Dominguez	.....	.....	22,500	20,800
Ventura Avenue	.....	.....	33,100	34,200
Midway-Sunset	.....	.....	49,800	51,900
Kettleman Hills	.....	.....	54,200	54,600
Wilmington	.....	.....	88,200	87,400
Others	.....	.....	271,900	258,600
Total California	592,000	575,000†	625,300	611,700
OKLAHOMA—				
Oklahoma City	.....	.....	114,500	85,025
Seminole Area	.....	.....	101,775	101,700
Fitts	.....	.....	30,325	30,050
Others	.....	.....	205,650	205,425
Total Oklahoma	473,300	428,000	452,250	422,200
LOUISIANA—				
North Louisiana	.....	.....	73,450	69,225
South Louisiana	.....	.....	195,550	192,050
Total Louisiana	262,000	257,920	269,000	261,275

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in April)	State Allowable in April	BARRELS DAILY FOR WEEK ENDED April 8	April 1
KANSAS—				
Burrton-Haven	.....	.....	8,775	8,500
Russell County	.....	.....	23,650	24,452
Silica	.....	.....	9,850	11,225
Others	.....	.....	111,525	122,825
Total Kansas	152,700	156,850	153,800	167,002
NEW MEXICO	115,300	109,700	109,650	109,950
MICHIGAN	48,300	.....	58,250	58,750
ARKANSAS	53,300	.....	54,200	54,250
MOUNTAIN STATES—				
Wyoming	50,000	.....	54,250	52,225
Montana	15,300	.....	13,550	13,100
Colorado	5,000	.....	3,850	3,950
Total Mountain States	70,300	.....	71,650	69,275
EASTERN STATES—				
Pennsylvania Grade	.....	.....	68,300	68,250
Southern Illinois (New Pools)	.....	.....	159,950	160,220
Illinois-Indiana (Old Pools)	.....	.....	8,490	8,165
Others, Eastern	.....	.....	30,050	30,550
Total Eastern States	254,100	.....	266,790	267,185
Total United States	3,434,000	.....	3,407,390	3,342,537

* Daily average, considering Sunday shut-downs and seventh day exemption at Rodessa.

† Recommendation of Central Committee of California Oil Producers.

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Madison defendants denied bill of particulars

Federal Judge Walter C. Lindley last week denied motions of seven oil companies and three oil company officials who sought bills of particulars in the government's second Madison "oil conspiracy" case. The court held that the indictments fully apprised the defendants of the charges against them and that a bill of particulars would unduly limit the government in its proof.

The court did, however, grant motions requiring the government to furnish a list of witnesses who would be called during the trial. Date of the trial has not yet been set by Judge Lindley, to whom the Madison cases were assigned at the request of Federal Judge Patrick T. Stone, pending outcome of a retrial of several corporate and individual defendants in the first case. The retrial is scheduled to start in Madison October 2.

Defendants concerned with last week's ruling did not join with other companies and individuals who last year, on conclusion of the first trial conducted by Judge Stone, entered pleas of nolo contendere to charges of combining unlawfully to restrict jobbers margins by use of uniform contracts.

They are: Tide Water Associated Oil Company, and Edward L. Shea, New York, company vice president, and J. W. Warner, Tulsa; Gulf Refining Company, The Texas Company, Barnsdall Refining Corporation, Globe Oil & Refining Company of Oklahoma, Globe Oil & Refining Company of Illinois, Globe Oil & Refining Company of Kansas, and I. A. O'Shaughnessy, Minneapolis, president of the Globe companies.

Motions filed by the Tide Water company and Shea and Warner to dismiss the indictments for lack of jurisdiction were held under advisement by Judge Lindley last week, while a motion filed on behalf of the Gulf company to quash the indictment was withdrawn by company attorneys.

Ten subjects scheduled for Pacific Coast A.P.I.

Ten subjects of interest to geologists, geophysicists, petroleum engineers and executives are scheduled for discussion at the spring meeting of the Pacific Coast District, American Petroleum Institute, Division of Production, at the Biltmore hotel in Los Angeles on April 11.

The program follows:

Morning Session, 9:30 a.m.—"Foam, Fog, and Snow," by Fred Ledeboer, safety engineer, Shell Oil Company; "A Preliminary Evaluation of Factors Controlling the Rate of Penetration in Rotary Drilling," by J. E. Brantly, Drilling & Exploration Company; "Economics of Deep Drilling, San Joaquin Valley," by Prof. John W. Dodge, University of Southern California, and "Geothermal Gradients in California Oil Wells," by R. W. French, petroleum engineer, Continental Oil Company.

Afternoon Session, 2:00 p.m.—"Economic Aspects of Gravel Packing," by W. A. Clark, petroleum engineer, The Texas Company; "Organization, Activities and Accomplishments of A.P.I., Division of Production," by Ernest K. Parks, consulting petroleum engineer, Los Angeles; "Applications of Drillable Material for Well Completions and Repair Work," by Otto Hammer, chief engineer, Security Engineering Company, Whittier, California; "Improvements in Formation Testing," by Frank E. O'Niel, Oil Field Service Company, Glendale, California; "What Vocational Education Should Mean to the Oil Worker," by Scott O. Thompson, superintendent of Compton Union Secondary School District, Compton, California.

Evening Session, Dinner, 7:00 p.m.—"Current Administrative Efforts in Conservation of Oil and Gas," by Colonel Ernest O. Thompson, commissioner of Texas Railroad Commission.

Engineers hope A.P.I. will study heaving shale

A group of engineers met at Houston April 3 to decide definitely whether to continue research into the heaving shale problem. After a three-hour discussion the committee voted unanimously to approach the American Petroleum Institute and the U. S. Bureau of Mines with the view of obtaining aid from those organizations.

Some reluctance to ask for contributions from large oil companies in the heaving shale belt was expressed, since the problem has not been boiled down to a point that permits a forceful presentation.

Representatives of the largest Gulf Coast companies stated their willingness to aid in the accumulation and classification of data that might present a good method of attack on the problem. A free exchange of ideas will be necessary, it was agreed.

The American Petroleum Institute already has shown an interest in the heaving shale problem, and the Central Committee on Drilling and Production Practices will be contacted, probably at the Mid-Year meeting this year. The U. S. Bureau of Mines has offered to contribute to research, also.

The University of Texas probably will be used as the clearing house for the information as it is assembled.

Representatives attending the meeting were I. W. Alcorn and E. W. Louden, Pure Oil Company; T. W. Keating, H. H. Power and W. R. Woolrich, University of Texas; R. E. Dansby, Stanolind Oil & Gas Company; F. B. Markle and E. P. Hubbard, Gulf Oil Corporation; T. V. Moore, Humble Oil & Refining Company; Brad Mills, THE OIL WEEKLY; F. R. Frederich and S. F. Bowlby, Shell Oil Corporation.

Mid-Continent water-flood research group organized

The organization of a Mid-Continent secondary recovery research group is nearing completion at Tulsa with Oklahoma and Kansas water-flood operators as group members. At the last meeting of engineers representing the member-companies initial plans were outlined, the status of the group was defined, some of the current problems confronting water-flood operators were discussed, and L. M. Arnold, 319 South Detroit, Tulsa, was made secretary. It was decided that research be directed first toward assembly and correlation of data and results obtained in actual field operation, this information to form the basis for further investigation along specific lines, or of problems of a specific nature. Results of all investigations will be furnished members only.

Due to the character of the work involved and to keep results mutually beneficial, membership in the group is being limited to companies having water-flood operations at some stage of development. Although there is no charge made against a participating member, the cost of research and field work is prorated within the group. Laboratory space and equipment, and technical direction, is being provided by Geologic Standards Company.

In the Pennsylvania area a similar group has been functioning for some years and has been valuable in increasing recoveries from flood properties and in the reduction of costs. Although the Pennsylvania group has solved many problems, those that are pertinent to Mid-Continent development have not been attacked. It is these that the local group will investigate. Stress is being given the practical solution rather than the theoretical angles of the problems. Producers believe that past work in the Mid-Continent area has indicated the desirability of concerted and united effort toward assuring the greatest possible oil recovery at the lowest cost, and that these problems can more accurately and economically be handled through a group than by private investigation.

Problem analysis will be directed by the group, selection being based upon relative importance. Those problems being considered as of particular interest are selective plugging, effect of varying viscosity and gravity on oil recovery, effect of permeability, porosity, initial oil and water saturations on final oil recovery; some means of increasing recovery from the hard, dark sand so frequently found at the base of the Bartlesville, most satisfactory pressures, ultimate recovery from water flood vs. air/gas repressuring and a study of well spacing patterns in respect to Mid-Continent conditions. These are some of the major problems confronting the operators at this time, although future development, particularly in other and deeper sand strata will present new problems to the group.

Seek 20-acre spacing in Seminole County

H. S. Moss and Kerr-Lynn Oil Company have made formal application to the Oklahoma Corporation Commission for a 20-acre spacing program for tracts in Sections 26, 27, 34 and 35, all in township 10 north, range 6 east, totaling approximately 1140 acres, Seminole County.

The Cromwell sand of Pennsylvanian age was found productive in the pool from 3804 to 3819 feet and the partnership believes this area can be economically and efficiently developed under the requested spacing program to ultimately recover the oil and gas therein. The gas/oil ratio cannot be in excess of 2500 cubic feet of gas per barrel of oil produced. From geologic data and investigations it is believed this horizon is productive from a new pool, near the old Searight pool, but that it is not a part or extension of any previous developments.

WEEK'S DRILLING HIGHLIGHTS

California

Cores of reputed Avenal sand from a wildcat in the southwest corner of Fresno County caused speculation as to whether a new field or an extension of East Coalinga Nose is indicated.

Illinois

Aux Vases sand contributed a new pool in Larkinsburg Township of Clay County, an area in which leases are held by a number of smaller companies. McClosky saturation was cored in a Tonti Township wildcat in Marion County. A mile north of Sandoval another wildcat is showing oil, while still another in Paradise Township of Coles County is preparing to acidize Devonian lime. In the same county another test looks good for 60 barrels from the Pennsylvanian.

Michigan

The wild gas well in Kent County has been brought sufficiently under control to warrant belief that more pipe can be run into the hole. This performance has resulted in rules being issued to prevent recurrence of the cratering threat.

Kentucky

Lime saturation below 1966 feet indicated possibility of a pool near Reed, Henderson County. A wildcat near Newburgh has two possible producing horizons. The second well in Corydon field cored saturated lime.

Southwest Texas

Clara Driscoll, Nueces County, got a sand 900 feet below regular producing horizons. Refugio County recorded a mile south extension for Melon Creek and an extension and new gas sand for Woodsboro. Pettus sand provided another field several miles south of Sweden, Duval County. Kelsey-Sun area got two new sands and a double extension.

Oklahoma

Garfield area's new wildcat discovery caused location of 4 offsets for immediate drilling. The Stephens County discovery on the old Cruse structure is deepening to increase production. A Kingfisher County wildcat found an oil show in Hunton lime but continues drilling to the Wilcox.

North Texas

A new pipe line outlet will cause resumption of large scale development of K-M-A and additional deep testing in the neighborhood. The second well of Ayslum pool, Wichita County, produced only 31 barrels. A southwestern Cooke County wildcat shows oil at 1635 feet.

South Louisiana

Testing in progress on a St. Bernard Parish wildcat may give the parish its first oil field. Eola's southeast outpost is logging normal structurally. Roanoke, Jefferson Davis Parish, was extended a half mile southwest. LaPice prospect's wildcat continued to core broken oil sands. Side wall cores indicated possibility of a new sand on New Iberia's flank. Chalkley's second producer was recorded.

Kansas

Topeka lime furnished a new pool a half mile northwest of Barton County's Beaver pool, which produces from Arbuckle, a formation which contributed a connecting link between Schroeder and Wilkins pools of Ellsworth County. Probable productive area of Morel pool, Graham County, was doubled by a 1¼-mile extension. A well was completed on a large block between Letsch and Hall-Miller areas, Russell County. Gorham pool got a half-mile extension. A southeast Barton County wildcat made 160 barrels on the pump. Heavy Arbuckle saturation in an outpost indicates a mile east extension for Chase pool, while a Sedgwick County wildcat is showing for production.

New Mexico

Drilling in Lea County registered an increase with 14 starts authorized in 5 fields. Offsets to the 4 flowing wells at Lovington will proceed as provision has been made for building a pipe line to take the oil.

Indiana

Warrick County may get its first production soon, a wildcat having cored 3 feet of McClosky saturation. Another in Posey County cored 7 feet of the formation and probably will usher in a new field.

Comparison of Permits Granted for New Wells

STATE	Week Ending April, 8	Total this Mo.	Total this Year	Total this Date Last Year	1938 Year Total
Arkansas	4	4	52	69	247
California	35	35	291	346	1,146
Louisiana	27	27	207	362	1,214
Kansas	17	17	333	473	1,453
Michigan	18	18	279	182	953
Oklahoma	35	35	529	568	1,978
Texas	245	245	2,966	4,122	12,369
Total	381	381	4,657	6,122	19,360

Summary of Wells Completed in the United States Week Ending April 8, 1939

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1939	Total this Date 1938
Alabama	....	....	....	....	.....	1	.....
Arkansas	2	1	....	1	720	61	62
California	22	16	....	6	20,650	285	304
Colorado	1	....	1	....	.....	7	3
Florida	....	....	....	....	.....	....	.....
Illinois	52	45	....	7	9,372	1,030	204
Indiana	....	....	....	....	.....	27	30
Kansas	24	15	....	9	10,554	323	517
Kentucky	12	2	5	5	35	172	192
Louisiana	10	8	....	2	2,515	252	299
Michigan	26	13	....	13	5,788	315	229
Mississippi	....	....	....	....	.....	1	7
Montana	....	....	....	....	.....	25	17
Nebraska	....	....	....	....	.....	....	.....
New Mexico	10	7	....	3	4,741	174	145
New York	10*	10*	....	....	41	136*	219*
Ohio	9	1	4	4	1	215	265
Oklahoma	45*	25*	2	18	23,780	523	591
Pennsylvania	16*	1*	15	....	25	315*	692*
Texas	179	113	5	61	77,440	2,694	3,612
Utah	....	....	....	....	.....	....	.....
West Virginia	8	2	6	....	30	140	239
Wyoming	1	....	....	1	.....	46	25
Total this week	427	259	38	130	155,692	6,742	7,653†
Total last week	426	295	35	96	145,484	6,315	7,147
Total this year	6,742	4,627	476	1,639	.....	....	.....

* Includes water-input wells. † Includes one well completed in Tennessee.

Oklahoma Fields

Garfield strike calls for four immediate offsets.
Stephens County discovery testing after deepening.

Tulsa.—Increased activity for Oklahoma the past week was noted with the two recent wildcat strikes drawing a total of six offsets, and with 10 or more interesting wildcats drilling ahead.

Hughes Drilling Company's Misener 1, C NE NW 10-20n-4w, the Garfield new discovery which revived the old Brown pool, was deepened from 5921 to 5944 feet in order to increase production. Pay is the second Wilcox topped at 5906 feet, with first 40-gravity oil encountered at 5918 feet. Four wells offsetting the new wildcat discovery are being staked and are due for action before the week ends. Hughes and Kelly will start Hawkins-Looman 1-A, NEc SE 9-20-4w, two locations southwest of the producer. Another well scheduled on the Misener tract is in SWc NW 10-20-4w and is to be offset to the north by Parker and other's Schroeder 1, SEc NE 9-20n-4w. A south offset is Brown 2, NWc SW 10-20n-4w.

The Stephens County discovery, Culbertson 1, NWc SE 4-1n-5w, which opened a new deep pool in the old Cruse structure, is testing after deepening twice to get an increase in production each time, although gas pressure continues low. Flow is varying from 300 to 500 barrels daily. The hole bottomed in Deese sand at 5606 feet. Southwest of this producer Ben Curtis has staked location for School Lot 1, SE SW SW 3-1n-5w, and J. G. Beard has staked Beard 1, in 9-1n-5w, south of the discovery. Test on the Culbertson 1 gauged 98 barrels by flow and 54 by swab in 12 hours.

Sinclair-Prairie Oil Company has location staked for George 1, NEc SW 5-27n-23w, Harper County, northwestern Oklahoma, 5 miles west of Buffalo and 8 miles southwest of a gas spot in the same county. This gas discovery of 1930 was made by Sinclair-Prairie's Howell 1, SWc 14-26n-24w, which had open-flow of 12 million cubic feet per day with 45 barrels of oil after drilling to 8590 feet, although it completed at a higher depth in the Mississippi lime. This may be the start of new developments for northwestern Oklahoma.

West Konawa pool, Seminole County, is seeing new activity as Russell Patterson's Johnson 1, NW SW SW 27-6n-5e, topped saturated Earlsboro at 2727 feet and drilled on to 2745 feet, where casing was run to test the show. Johnson 2, SWc 27-6n-5e has been staked by the same firm. Three locations staked in the same county to try for new horizons include J. Garfield Buell and others' Madgett 1, SE SW SE 15-10n-5e, a Wilcox test north of Earlsboro pool. Campbell Drilling Company's Killingsworth 1, NW NE SW 14-9n-6e, Seminole pool, will drill for Hunton lime production. A location northeast of the old Searight pool, revived by a recent Cromwell sand producer, has been staked in H. S. Moss' Haight 1, C S½ NE NE 34-10-6e.

Hughes County has a new start in Phillips Petroleum Company's Shemwell 1, C SE NW 8-5n-10e, one-third mile from same company's Beeker 1, NE NW SW 8-5n-10e, which is pumping approximately 100 barrels of oil daily with considerable water, accompanied by a large volume of gas. Present total depth is 6283 feet, from which it was plugged back to 5639 feet. Hudson 1, SEc 8-4n-9e, a wildcat start by Continental Oil Company between the old Allen pool and Citra area was under way after setting surface pipe.

Pottawatomie County has five outpost locations spotted from old production. John L. Dickinson's Lareu 1, near Wanette, has finished pits. A Wilcox test is being started by Mark Kleedon in C NW NW 14-7n-3e, west of St. Louis pool. Ray Stephens' Thorn 1, E½ SE 36-8n-4e, north of St. Louis was moving in materials. Surface pipe was set at Wright and Hines test in C SE SE 19-6n-5e, south of St. Louis pool. Nels Burton et al have staked location for Boggs 1, NEc SE 16-9n-2e, 6 miles northwest of Tecumseh.

Southwestern Oklahoma gets two tests as Russell S. Tarr staked location for Watkins 1, SWc NW 20-7n-20w, Kiowa County, just east of Granite pool, at which the Wilcox will be sought. This location is north of a Viola lime test drilled to 1525 feet a few years back and abandoned. Pure Oil Company has derrick completed at Fuqua 1, SWc NE 18-6n-16w, six miles southeast of Komalty.

A good show in the Hunton lime for Kingfisher County was encountered in Trigg, Garr and Gutowsky's Lankard 1, NEc SE 34-17n-6w. A core from 7571 to 7588 showed saturation with gas odor, but drilling is proceeding to the Wilcox.

Olson Oil Company's White 1, C NE NE 30-11n-1e, Oklahoma County, cored dry second Wilcox sand topped at 6503 feet and was plugging back after setting pipe at 6001 feet to test shows in Misener and Hunton zones which showed saturation.

Three completions for Ramsey pool, Payne County, included Mid-Continent Petroleum Corporation and Carter Oil Company's Nottingham 1, NWc SE 18-18n-2e outside of the community block which flowed 262 barrels the first hour, 224 the second, 220 the third, and 210 barrels for fourth and fifth hours each to earn a potential of 5653 barrels. Simpson 1, SE SW SW 7-18n-2e, after topping the Wilcox at 4824 feet, flowed 464 barrels during the first hour and 369 the second hour to get a potential of 9692 barrels. This well is one location north of the 640 acres within the unit and is owned by Mid-Continent Petroleum Corporation. Stanolind Oil and Gas Company's Walters 2, NWc NE 18-18n-2e, outside of the block, flowed 209 barrels for first hour and 181 barrels the second for a potential of 4680 barrels.

The Coyle pool, Payne County, has two wells under way with The Texas Company's J. S. Graham 1, C E½ NE SE 11-17n-1e, drilling below 2725 feet and L. M. Graham 1, C W½ SW SW 12-17n-1e, rigging up rotary.

A Wilcox test for Grant County was staked by Carter Oil Company, Staggers 1, C W½ SE NW 4-25n-3w, is two miles north of Lamont pool, on the Crissman trend.

A new horizon one mile south of pro-

Oklahoma Completions

Company, Well and Location	Init. Prod. Bbls	Depth
Caddo—		
Stephens, Huron 1, sw sw nw 26-6n-10w	20	3528
Creek—		
Buell, Walker 1, sw nw sw 15-14n-10e	*	3396
Abraham, McIntosh 1, nwc ne 7-16n-10e	20	2308
Fortner et al, Quinn 2, nw nw ne se 27-19n-10e	*	2021
Garvin—		
Pure, Derdyn 1, ne nw se 19-3n-1e	*	4333
Hughes—		
Amerada et al, Adams Estate 2, sw ne sw 31-9n-9e	*	4148
Jackson—		
Kerbo et al, Fitzgerald 1, nwc ne 7-1s-19w	*	2668
Lincoln—		
Indian States, Bailey 1, nwc ne 2-12n-5e (gas input well)		4244
Big Chief Drlg. Co., Christian 1, se ne ne 3-14n-2e	*	5059
Mudge Oil Co., Tetters 2, sec ne 9-14n-6e	50	3148
Cooper Drlg. Co., School Land, 3 sw se ne 16-14n-6e	95	3087
Murray—		
Carter et al, Vinsinite 1, nw nw ne se 34-1s-2e	*	2505
Noble—		
Shell, Moelling 2, se sw se nw 31-21n-2w (pb 5507 ft)	390	5538
Okmulgee—		
Rebold, Broadnex 1A, ne ne se nw 31-12n-14e	*	2230
Viersen, Stevens 11, sw sw se sw 10-14n-14e (otd 1155 ft)	*	1795
Holifield, Ashley 1A, sw sw ne nw 32-14n-14e	¶5	1739
Payne—		
Mid-Continent, Ramsey 9, sec nw 18-18n-2e	14808	4832
Pontotoc—		
Patsy Oil Co., Bates 1, nw ne sw 26-2n-7e	3864	3943
Superior, Summers 1, ne nw nw 36-5n-4e	212	2591
Griffin, Barnett 1, sw nw sw 7-5n-5e	*	2673
Senora, Cox 2, se nw nw 17-3n-5e	75	2543
Magnolia, Chandler Estate 2, nwc ne 35-5n-7e	¶10.1	2190
Pottawatomie—		
Schafer, Zoeller 1B, 100 ft s nwc sw 5-6n-5e	152	4348
Magnolia, Jordan 3, se ne sw 12-7n-4e (pb 3300 ft)	*	3997
Kimitz, Billington 1, nwc se 8-7n-5e	*	4303
Delaney et al, Bruno 1, se ne se 31-7n-5e	540	4140
Alma, Smith 6, ne sw ne 32-7n-5e (pb 4085 ft)	140	4210
Trigg, Vanelous 1, nec se 32-7n-5e (otd 4072 ft)	700	4170
Viersen, Palmer 2, sw se nw 32-7n-5e	124	4205
Palmer 3, ne se nw 32-7n-5e	155	4190
Hall et al, Coleman 1, sw nw nw 33-7n-5e (otd 4051 ft)	200	4156
Seminole—		
Grimes, Dye 1, nwc se 2-5n-5e (pb 2950 ft)	*	3379
Simpson et al, Gassaway 1, se ne ne 14-6n-5e	*	2863
Terry et al, Scroggins 1, nw sw sw 3-6n-6e	3	2904
Sunray, Millsap 1, nw sw sw 7-6n-6e	240	3800
Rogers et al, Fisher 2 "A," se nw sw 25-7n-5e	165	2964
Fisher 1-B, swc 25-7n-5e (otd 2970 ft)	24	2980
Atlantic, Norvell 1, sw nw nw 21-7n-6e	418	4357
Commercial et al, Billington 1, nec sw 28-7n-6e	*	2348
Cities Service, Fish 3 "B," ne sw se 19-7n-8e (otd 3102 ft)	1351	4148
Brown 5, sw ne se 3-8n-5e (pb 4006 ft)	20	4188
Burke-Greis, Harjoche 1, nec sw 19-8n-7e	*	4275
Wood, Burton 1, se nw nw 28-9n-6e (otd 4137 ft)	*	4245
Stephens—		
Mudge Oil Co., Crosby 19, se se ne sw 23-1s-5w	21	646
Tillman—		
Smith, Hamill 1A, ne ne nw nw 6-5s-15w (otd 2435 ft)	*	2829

* Failures; † Junked; ¶ Million cu. ft. gas.

duction in South Braman, Kay County, in E. J. Shaffer's Mary Onstott 1, SE SW NE 17-28n-1w, was stuck in the Oswego lime. The well pumped 5 to 17 barrels per hour. Previously this well had been abandoned as a failure at 3675 feet in the Wilcox sand, but was later plugged back and acidized with 11,000 gallons to obtain a new source of oil from the Oswego, topped at 3210 feet and drilled to 3320 feet. This is the first commercial producer from this horizon.

Carter Oil Company's Smith 1, C SE SW 26-5n-8w, in the old Chickasha gas field, has started to test all previous shows encountered. Depth is 6618 feet but the well may be deepened to the 10,000-foot horizon.

Continental Oil Company's Procter 1, C NW 28-10n-20w, Oklahoma's deepest test now active, was drilling below 10,815 feet in early Pennsylvanian formation after previously encountering a gas show which required the use of heavier mud.

Tillman County had two dry holes in R. O. Ray's Madison 1, NWc SW 11-2s-16w, east of Fredrick, abandoned at 1884 feet, and Smith's Hamel 2, NE NW NW 6-5s-15w, nine miles west of nearest production, Red River Bed pool, was also a failure in shale at 2829 feet. Amon G. Carter's Vinsonite 1, NW NW NE SE 35-1s-2e, Murray County, was abandoned at 2505 feet.

Kansas Completions

Company, Well and Location	Init. Prod. Bbls	Depth
Barber—		
Olson, Coffman 1, c nw ne 25-31s-12w	*	4850
Barton—		
Phillips, Bitter 4, se nw se ne 6-16s-13w	2813	3356
Harbar, Dentsch 1, 110 ft e csl sw nw ne 9-16s-13w	*	3420
Stanolind, Jutting 3, se nw ne 15-20s-11w	421	3303
Gulf, Lewis 1, c n½ nw nw 2-20s-12w	*	3414
Butler—		
Wixon et al, Moore 1, swc nw 32-24s-4e	35	2709
Saco et al, Draper 4-A, ne sw sw 27-25s-5e	50	2515
Landon et al, Marshall 1, nwc ne 28-27s-6e	40	3030
Hay, Hall et al Ferrell Ranch 1, sw nw ne 28-28s-8e	35	2689
Bowland et al, Frankson 1, sec sw 2-29s-6e	*	165
Cowley—		
Lloyd et al, Jones 1, csl se sw ne 2-31s-3e	*	3357
Ellsworth—		
Continental et al, Rolfs 2, ne swc ne 28-17s-8w	375	3244
Gulf, Schroeder 2, se nwc sw 20-17s-9w	3000	3230
McPherson—		
Marylyn, Dixon 1, nw ne nw 7-19s-2w	10	3019
Shell, Giffin 6 "A," se sw nw 14-19s-2w (pb 2999 ft)	290	3356
Sinclair-Prairie et al, Martens 1, csl sw nw sw 20-21s-3w	*	3910
Reno—		
Westgate - Greenland, Johns 1, sec sw 25-22s-5w	850	3913
Sinclair-Prairie, Schroeder 1, nwc se 36-22s-5w	621	3932
Rooks—		
Krueger, Tatkenhorst 1 "A," se nw ne nw 14-9s-16w	466	3446
Russell—		
Central, Karst 1, 100 ft e sw nw sw 21-15s-13w	*	3405
Phillips, Mollie 2, sw nw ne 35-15s-14w	1448	3358
Sedgwick—		
Dickey, Schweiter 1, swc ne 32-28-2e	*	2604
Stafford—		
Virginia Drilling Co., Schlocketmayer 1, sec nw 7-21s-11w	*	3580
Sumner—		
Stelbar et al, Curtis 2, swc nw 28-31s-1w	100	3698

* Failures; † Junked; ¶ Million cu. ft. gas.

Kansas Field Development

Topeka lime production is found near Beaver pool. Strike appears to join Schroeder and Wilkins pools.

Wichita.—Operations resulted in a new pool during the past week and major extensions to five other fields. One gas well was completed to add to the development in the Lyons area, and a connecting well is showing to connect Schroeder and Wilkins pools of Ellsworth County on the Uplift.

In northern Barton County Martin et al's Feltes 1, NW SW SE 8-16-12w, picked up production in Topeka lime to make the first oiler in this formation in the area. The location is about one-half mile northwest of Beaver pool, producing from Arbuckle lime. The test may be considered an extension, although, being outside of development as proving a new zone, it will be classified as a new pool. The hole was carried to 2906 feet and the test made a potential of 2546 barrels per day natural.

Schroeder and Wilkins pools of Ellsworth County, west of Lorraine and just north of the Rice County line, appear to be joined through finding Arbuckle production in Central Petroleum Company's Frances 1, CEL NW 19-17-9w. The test drilled to 3245½ feet in the Arbuckle, where it began making oil. It is approximately one-half mile southeast of Wilkins and the same distance northwest of Schroeder, each of which is producing from Arbuckle.

Morel Size Doubled

In Graham County, on the farthest northwest strike of the Central Kansas Uplift, Continental Oil Company's Putnam "A" 1, CWL NW 23-9-21w, 1¼ miles southeast of production, proved a producer on test and doubles the probable productive area of Morel pool, the only producing field in the county.

Between Letsch and the Hall-Miller areas of Russell County, Skelly Oil Company obtained a 524-barrel potential on the pump on Carter 1, CS½ SW NE 33-14-13w. Two pays were cut in the Kansas City-Lansing, at 2847 to 2853 and from 2861 to 2870 feet. This completion is on a large block between the two pools, prospects being for extensive development.

Amerada Petroleum Corporation's semi-woldcat test about a mile west of production in Kruckenberg pool, Barton County, may make a completion in Lansing. The well, Merten 1, CNW NW 14-19-15w, failed to find the Arbuckle which produces in the nearby field and found the Granite Wash dry. Hole was plugged back to the Lansing at 3304 feet.

Gorham Extended

Gorham pool received an extension through Earl F. Wakefield's Neidenthal 1, NW NE NW 13-14-15w, one-half mile southeast of the pool. The test drilled into Lansing lime at 3057 feet and was completed for 1218 barrels. This well adds nearly 15 locations to the southeast development trend.

York State Oil Company's Marchand 1, CE½ NE NE 24-20-12w, southeast Barton County, has completed for 160 barrels of oil in 24 hours on pump after acid treatment. The hole is in Arbuckle at 3316 feet. A wildcat, this test has been closely followed, particularly in view of early indications of favorable production which failed to mature at completion. The test may be reacidized.

Chase pool, western Rice County, may be extended a mile east by Phillips Petroleum Company's Proffit 1, CE½ NE NE 8-20-9w. Arbuckle, the pay which is chiefly productive in Chase pool, was topped at 3242 feet and drilled to 3245 feet. A core showed heavy saturation and pipe is being run for a test. Top of Arbuckle was reported as being higher than in the pool proper.

A Lansing well south of Goodrich production, and the first well in this horizon, seems assured at Ace Oil Company's Black 1, NW SE NE 21-25-1e. The test is only eight miles directly north of Wichita and but three miles northeast of Valley Center, Sedgwick County. Carried to 2280 feet in the lime pay, the hole filled to within a few feet of the top of the casing in 30 minutes.

The gas development east of Lyons, Rice County, has received added impetus at Shell Petroleum Corporation's Wiggins 1, C NE NE 11-20-8w, one-half mile northeast of the field. This test is another location on a prominent structure so far productive only of gas. However, past drilling has been productive in Chat, with the late test producing a gauged 20,000,000 cubic feet from Simpson after going to Arbuckle and finding it dry. Casing was perforated in the well between 3290 and 3297 feet for completion.

A new location has been announced for the recently opened Ferrell pool of Cowley County, where Table Mesa Oil Company's Ferrell Ranch 1, NWc 28-28-8e, completed in Mississippi lime as a minimum well. The new location is NW NW NE 28-28-8e, Ferrell 2, by the same operator.

Burrton townsite is in the line of development in Burrton field, western Harvey County, placed there by Henry C. Bennett et al's Ashman 1, CNW NW 9-23-3w. The test was completed for a potential of 438 barrels and is located east of past drilling. It is an offset to townsite locations.

R. L. STRATTON, production superintendent for Sinclair Prairie Oil Company, Nowata, Oklahoma, died March 30 in Coffeyville, Kansas. He was stricken with a heart attack while driving his automobile. Stratton had been in charge of production in the shallow-well area of northeastern Oklahoma, first with Prairie Oil & Gas Company, for 20 years.

Illinois Developments

New Aux Vases field found in Larkinsburg Township.

Tonti Township wildcat cores McClosky saturation.

Olney, Ill.—Richard Duncan's J. H. Liggett 1, SE NW SE 17-5n-5e, Larkinsburg Township, opened a new Clay County pool last week when it was successfully completed in the Aux Vases sand for 41 barrels an hour. Shut in shortly thereafter for lack of storage, the well is expected to make 1000 barrels a day. If this production is obtained, it will be the largest producer from this formation in the state. Bottom was at 2380 feet.

An east offset, Bumpus & Burnett's Cyrus Liggett 1, SE NE SE 17-5n-5e, started within the past month, cored some fine Aux Vases saturation and shut down to set casing to the top of the sand. Nearby, Richard Duncan's H. Huber 1, 17-5n-5e, was drilling at 2300 feet, and Roger Lacy was moving a rig to the Landreth farm.

The new area is expected to see a rapid development campaign during the coming months, as acreage surrounding the pool opener is held by many independents. The drilling area may embrace four counties, Effingham, Marion, Fayette and Clay. The structure is almost four miles wide and between five and six miles long in some places.

After coring through 31 feet of Benoist sand and 12 feet of Aux Vases, both of which carried only faint traces of oil, Arthur "Tex" Harvey's Salem Building & Loan 1, NE SE 33-3n-2e, Tonti Township, Marion County, cored 12 feet of McClosky saturation which indicated a new pool. Casing was being run to the top of the saturation. The wildcat topped the lime at 2161 feet, 30 feet higher than W. S. Tatus's Bachman 1, 1½ miles to the southwest, which failed to make a producer in the McClosky and was abandoned.

Completion Delayed

Completion of Leathers et al's A. Yonoka 1, NW SE SW 22-2n-14w, Bonpas Township, southern Richland County, 15 miles from production, was delayed last week. Casing was being moved to the location. The wildcat cored 4 feet of tight McClosky saturation, which was believed capable of making a small well after acid treatment.

The Texas Company last week joined with other operators in delaying development of the McClosky lime horizon in the Lake Centralia-Salem pool of Marion County. The company temporarily abandoned 8 drilling operations in compliance with the plan. A slight increase in activity marked improved weather and ground conditions in all sections of the basin area.

Max Pray's J. Langefeld 1, SW SW NW 4-2n-1e, Sandoval Township, 1 mile north of Sandoval, encountered 10 feet of saturation below 3090 feet when it resumed last week from 3075 feet with cable tools. The test had been idle for several weeks when it failed to produce after coring 24 feet of Niagaran lime below 3051 feet. It had just started swabbing oil from the lower saturation when it was tied up by a fishing job. The well was the second attempt to gain Niagaran lime saturation following completion of Southwestern Oil & Gas Company's Benoist 21 as the first commercial well in that formation in the area. The discovery is about ¾ mile south and west of Pray's test. A half mile west of the discovery, Menhall's Illinois Central R. R. 1-A was abandoned at 3021 feet after coring a dry Devonian lime, topped at 2967 feet.

An attempt to extend the new Cordes pool, Washington County, 2¾ miles to the south, was apparently doomed to failure when Hutchins' test in Section 35-3s-3w, drilled by Jim Broadus, cored 17 feet of dry Benoist below 1267 feet. Three new producers were added to the area last week, and 5 other wells were at various stages before completion. McBride, Inc.'s Weise 1, NW SW SE 15-3s-3w, 700 feet northeast of Pres Cochrane and G. H. Blankenship's Oak Grove Cemetery 1, first large producer in the area and brought in two weeks ago, is rated at 300 barrels a day following a shot with 15 quarts of nitro. Their Oak Grove Cemetery 2 is rated at 275 barrels a day, and Shell Petroleum Corporation's Holston 1, NE NE NW 22-3s-3w, south offset to the Cemetery 1, was rated at 225 barrels. All wells were completed in the Benoist sand. Cochrane said that no additional Benoist wells will be drilled on the Cemetery lease, but that a McClosky test will be undertaken on this acreage in the near future. Completion of a pipe line from the new pool 3 miles northwest of Cordes was delayed by union demands made upon the contractor.

Shows in Devonian

R. F. Wheeles et al's Michael 2, SE SE NE 2-11n-7e, Paradise Township, Coles County, drilled plugs after setting casing to a light Devonian showing at 3250 feet and was preparing to acidize. If successfully completed, it will be the state's second Devonian producer—the Benoist 21, Niagaran well in the Sandoval area of Marion County, being the first. The No. 1 on this lease opened a new Cypress sand pool when completed in February with an initial production of 18 barrels of oil and 20 barrels of water.

Also in Coles County, W. R. Miller's Giffin 1, 22-11n-10e, Hutton Township, was cleaning out after a shot of nitro in the Pennsylvania sand, topped at 641 feet. Operators predicted the wildcat would be good for between 60 and 80 barrels a day.

The first McClosky test in northeastern Wayne County, Kingwood Oil Company and Held's Gibbs 1, NW NW SW 11-1n-9e, Mount Erie Township, was drilling at 3000 feet and preparing to core for the lime.

In Jefferson County, W. F. Armstrong's S. W. Scott 1, W½ SE 23-

Illinois Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Clay County—		
Pure, Smith 6A	300	3065
J. H. Smith 4	31	3065
J. T. McAllister 3A	71	3085
Burnett et al, Smith 1	*	2540
Edwards County—		
Roach, Voyles and Merrill (Leach Bros.), A. Lee 1	*	4101
Effingham County—		
Whisenant et al, Betram 1	*	2511
Fayette County—		
Texas Co., J. Swarm 2	133	1577
Carter, McClain 4	128	1576
L. H. Heckert 1	100	1531
Harley Yolton 1	351	1521
Mary Hoar 1	23	1592
Estella Hopper 2	160	1552
Harold Logue 1	284	1538
S. R. Myers 3	636	1573
Katie Owen 2	133	1512
Katie Owen 3	233	1509
Williams et al, Smith 8	75	1544
Smith 9	125	1566
Minerva Oil Co., Morris 3	75	1566
R. B. Creager, J. H. Hiatt 1	200	1562
Liggett & Davis, School 1	*	1200
Jefferson County—		
Kingwood Oil Co., Frost 1	*	2288
Marion County—		
Texas Co., E. Farthing 1C	140	1887
H. Heyduck 3	140	1889
City of Centralia 19	524	1803
City of Centralia 21	637	2003
L. Hawthorne 6	245	1810
O. Johnson 7	287	1771
O. Johnson 8	245	1995
E. Jett 6	175	1835
E. Jett 7	175	1843
H. C. Shanafelt 1	210	1881
N. Shanafelt 2	189	1860
N. Shanafelt 3	189	1864
J. Friesner 6	595	1712
McConnaughhay 1A	371	1813
McConnaughhay 3B	266	1827
F. Miller 4	322	1806
Hollingsworth, Kalkbrenner 8	315	1780
A. A. Bowden, B. E. Martin 1	12	2129
Hull, Stouffer & Baughton, B. E. Martin 1	25	2136
Kingwood-Bell, Ella Rogers 1B	130	2151
Shanafelt 2C	234	1845
Richland County—		
Pure, Wakefield 7	113	2605
Shelby County—		
J. A. Ayleward, Wabash 1	150	1350
Frederick et al, Fluge 1	*	697
Washington County—		
Shell, Hake 1	*	1680
Wayne County—		
Pure, C. B. Clay 10	158	3173
Arthur Johnson 2	150	3166
J. A. Johnson 2A	35	3170
Roscoe Barnard 1A	267	3171
Rockhill Oil Co., Twist 4A	15	3359

* Failures; † Junked; ¶ Million cu. ft. gas.

Ohio Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allen County—		
The Davidson Co., Daugh 1	*	1373
Cuyhoga County—		
Benedum-Trees Co., Holaday 1	¶5.00	2825
Guernsey County—		
Ohio Fuel Gas Co., Romans 1	*	1426
Huron County—		
Boston & Cosgrove, Kramer 1	*	2026
Knox County—		
Moore et al, Cochran 1	*	1860
Licking County—		
Hoover Bros., H. Wells 3	¶	758
Lorain County—		
Ohio Fuel Gas Co., Arnold 1	¶.53	2295
Noble County—		
Yoker Valley Oil & Gas Co., Long 1	¶3.50	1429
Washington County—		
Greenlee, Dow 4	1	1530

West Virginia Completions

Cabel County—		
W. Va. Gas Corp., Keyser 1	¶.45	3335
Calhoun County—		
Gunn et al, Barr 1	¶.21	1875
South Penn Oil Co., Brannon 4	5	2150
Kanawha County—		
United Fuel Gas Co., G. C. Patterson et al 4823	¶7.65	4980
Godfrey L. Cabot, Inc., H. M. Hoge 1	¶6.35	5041
Lincoln County—		
Cambridge Gas Co., E. Davis, Sr. 2	¶.25	3902
Harvard Gas Co., Lincoln Mineral Co. 6	¶.08	3666
Pleasants County—		
Deem, Deem 2	25	1936

* Failures; † Junked; ¶ Million cu. ft. gas.

3s-2e, McClellan Township, southwest of Mt. Vernon, was coring for the McClosky at 2850 feet. The wildcat topped the Benoist at 2620 feet and the Aux Vases at 2690 feet. Both were dry.

In Jasper County, the John Harrison 1, SW SW 2-7n-10e, near Hunt City, had a show of oil in McClosky and was to be acidized. A Gallatin County wildcat, Delta Drilling Company's Stenson 1, SE SE SW 9-9s-9e, Gold Hill Township, showed some McClosky saturation and was shut down at 2795 feet awaiting orders.

Considerable interest was attracted by Kingwood Oil Company's re-entry into McWhorter 1, C E½ SE NW 15-6n-6e, Effingham County, which was abandoned at 5823 feet several months ago as the deepest hole in Illinois. It will be carried to the St. Peter, expected at about 6200 feet. The wildcat, which will be deepened with a heavy rotary rig, is on the southern edge of the county, 5 miles east of Mason and 5 miles southeast of Watson. Nearest important production is 15 miles.

Indiania Fields

Campbell Township wildcat promises new field.

Posey County test sets casing after coring show.

Evansville, Ind.—Arthur Grewe et al's Jas. S. Brammer 1, SE NE NE 14-5s-9w, Campbell Township, promised to bring Warrick County into the oil play when it cored 3 feet of McClosky saturation below 1887 feet. Deepened with a diamond core drill from 1000 feet, where it had been standing idle for several months, the hole was carried to 1960 feet, but was plugged back for a test of the McClosky. Operators predicted it would make a commercial well after reaming out to run casing.

In Posey County, A. Grewe & August Kruse's Pauline Scherer 1, NW NW SW 13-7s-13w, Black County, cored 7 feet of good McClosky, topped at 2703 feet. Casing was being set to the top of the lime. At an elevation of 385 feet, the wildcat topped the Waltersburg at 1855 feet, the Tar Springs or Jett sand at 1928 feet, Glen Dean at 2040 feet, Golconda at 2160 feet and McClosky at 2703 feet. Bottom was at 2712½ feet. About 7 feet of tight saturation was drilled through in the Jett sand.

W. W. Damron's Shelby Wright 1, SE SW NE 19-7s-6w, Ohio Township, reported a show of oil and gas between 645 and 680 feet. It was drilling ahead with cable tools after setting 10-inch to 780 feet.

Much Activity

Virgil M. Simmons, commissioner of the department of conservation, reported 60 wells at various stages in Indiana, with between 15 and 20 more to start shortly. An estimated 5,000,000 acres are under lease for oil and gas, the bulk of the acreage in the southwestern counties of Posey, Vanderburgh, Warrick, Spencer, Gibson, Pike, Dubois, Knox, Daviess, Martin, Sullivan and Vigo. Recent developments have carried extensive leasing activity also into Orange, Greene, Clay, Monroe, Morgan, Johnson, Owen, Putnam and Parke counties.

Approximately half of the current

Kentucky Fields

New oil pool looms near Reed, Henderson County

Wildcat has two possible producing horizons.

Owensboro, Ky.—Springrose Drilling Company's Tillman 1, 1¼ miles northwest of Reed, Henderson County, cored a 6-foot McClosky saturation below 1966 feet which promised to open a new pool. Casing was set to the top of the lime and preparations made to acidize on drilling out the plug.

At least five tests have been drilled in the vicinity of Reed, but all that found saturation were drowned out by salt water. Cooper, Acos & Cooper's Helen C. Ruggles 1, 3 miles north of Reed, was abandoned last week at 2048 feet.

L. J. Palmer's Oscar Letcher 1, 2½ miles southwest of Newburgh, deepened to the second break in the McClosky lime where a saturated 8-foot core was removed below 2119 feet. Botttom was at 2127 feet. Acid treatment will be given both McClosky lime breaks, and if satisfactory production is not obtained, the wildcat will be plugged back to the Cunningham sand, where operators declare a well is certain.

KYMO Oil Company's Pittman 1, in the north section of the Birk City pool, was dry in the McClosky. When plugged back to the Cunningham and the casing gun-perforated, the well started at between 80 and 100 barrels a day.

Sun Oil Company's G. Trigg 1, expected to confirm the pool near Corydon opened by this company several weeks ago, cored five feet of McClosky saturation in the second lime break below 2626 feet. Operators were preparing to drill plug. It is not expected to make as large a well as the discovery, which yielded 600 barrels natural flow on its initial test. Two feet of saturation was found in the upper McClosky, topped at 2592 feet.

In Muhlenberg County, Fred Phillips' Shearn Coal Co. 2, a direct offset to this operator's discovery on the same lease which pumped 280 barrels in a 24-hour test, was completed for an initial pumping production of 52 barrels following treatment with 2000 gallons of acid. The well first gave indications of being a duster. The No. 3 was drilling below 1200 feet, while Phillips Petroleum Company's Shearn 1 was drilling below 800 feet.

Guy J. Stumpff of Fort Worth, Texas, associated with W. B. Worthen of Atlanta, Texas, has completed arrangements to start a McClosky sand test 3½ miles northwest of Glen Dean, Kentucky, in Breckenridge County. The test will be the first McClosky one in that section of the county, and is expected to be underway by April 10.

Kentucky Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Daviess County—		
Wana Oil Co., Chapman 8	*	1179
Rex Pyramid Oil Co., Litsey 3	*	1237
Wana Oil Co., Taylor 3	*	745
Floyd County—		
P. Fitzpatrick, S. Fitzpatrick 1	¶.20	1889
McIntosh et al, Layne 1	¶.05	2595
Henderson County—		
Aetna Oil Service Corp., Pitts 2	25	1738
Hopkins County—		
Gulf, Schmetzer 1	*	4548
Martin County—		
Kentucky-West Virginia Gas Co., Preece 5251	¶	1241
Shewey, Hale & Ware, Stepp Heirs 2	¶.28	2530
Ohio County—		
E. Neal et al, J. C. Nabors 6	10	516
Murphy & Vickers, Wedding 4	*	320
Pike County—		
Columbian Fuel Co., Tierney GW-831	¶.50	1926

* Failures; † Junked; ¶ Million cu. ft. gas.

New York Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegany County—		
Tress Oil Co., Northrup farm, Bolivar	5	1410
Bradford Prod. Corp., Lot 8, Genesee	6	1389
Bradley & Streeter, S. Penn Oil Co., farm, Genesee	7	1363
Cleveland Oil Co., Clemens farm, Clarksville	5	1320
Cam Oil Co., Peavy farm, Genesee	4	1431
Karl & Weller, Swarthout farm, Genesee	6	1352
Gray Oil Co., Gray farm, Genesee	8	1364
Allegany: Water Intake Wells		
Ebenezer Oil Co., Vincent farm, Scio	...	1065
Chenunda Creek Oil Co., Richmond farm, Willing	...	1040
H. W. Patterson, Ockerman-Norton farms, Scio	...	980

Pennsylvania Completions

BRADFORD DISTRICT

Crawford & Simon, Kinley Oil Co.	5	....
Crawford & Simon Kinley Oil Co.	6	....
F. J. Eisert, Loop Estate	3	....
Forest Oil Corp.	1	....
Niagara Oil Corp.	1	....
Bradford Transit Co., 7 wells	7	....
Bradford: Water Intake Wells		
Niagara Oil Corp.	...	....
Forest Oil Corp.	...	....
Middle District		
W. C. Rhodes, Rhodes	2	....
New York-Pennsylvania Gas Field		
Clancy, School District No. 5	¶	....

* Failures; † Junked; ¶ Million cu. ft. gas.

operations are wildcats, or tests of deep horizons in former shallow pools. The past months have seen a revival of activity in the Trenton area of northeastern Indiana, where deep tests are being undertaken in an area that has produced much oil and gas in past years.

Derrick was being erected by J. B. Bond, contractor, for W. R. Nicholson's P. Fleener 1, SE NW NW 25-3s-13w, Gibson County, which will be a McClosky test.

Griffin Pool

The McClosky pool opened at the turn of the year in Wabash Township, Gibson County, has been named the Griffin pool by the Indiana Division of Geology. The Wabash river receded sufficiently during the week to enable Ray J. Ryan to resume drilling Wm. & Brizella Dunn 1, NE SE SE 18-3s-13w, which had been shut down for several weeks by high water. About 1½ miles southeast of the discovery, it was coring for the McClosky.

After a prolonged fishing job at 1064 feet, Midwest Development Corporation's Louis A. Wirth 1, NE SW NE 15-2s-9w, Columbia Township, Gibson County, resumed drilling last week.

At other Gibson County locations, United Oil Corporation's Wm. M. Mason 1, SE NE SE 5-3s-9w, Barton Township, was shut down with tools in the hole at 1602 feet; Indiana Oil Producers' Harris & Barr 14, SE NE NW 2-2s-11w, Patoka Township, was running pipe at 782 feet; Harlan E. Gray's Carlos Meade 1, SE SE SW 12-1s-10w, Washington Township, was drilling at 1300 feet, and Michel Bros. Company's Fannie G. Putnam 1, NW NW NW 25-1s-12w, White River Township, was drilling at 180 feet.

In Orange County, R. S. Hayes' Ralph Baker 1-A, SW SE NW 29-3n-2w, Northwest Township, was drilling at 3170 feet, nearing the St. Peter, expected at 3200 feet. It was the sole operation in the county.

Arab Petroleum Company's G. Tieken 1, SE SE SW 17-5s-11w, German Township, successfully completed a fishing job and was drilling below 2590 feet at last report. The wildcat is 3 miles southeast of St. Wendel.

Kermit operators want change

Wells producing from the Colby sand in the Kermit field, Winkler County, would be grouped together for proration purposes under plans submitted by Magnolia Petroleum Company at a hearing before the Texas Railroad Commission last week. Some of the wells in the Scarborough field, adjacent to the Kermit, would be placed under the same standard.

The program was agreed to by Gulf and Stanolind, the only other operators who attended the hearing. There are 36 wells producing from the sand and they have an allowable of 26 barrels each, which is slightly higher than the average allowable for other wells in Kermit and Scarborough.

The Colby sand wells have been developed on the basis of one well to 17.74 acres, while other wells drilled in the area are on ten acre spacing.

West Texas Fields

North Cowden east edge well makes record initial oil flow. Bennett and Wasson activity retarded by lack of outlet.

Midland, Texas.—An east edge test for the North Cowden field, Ector County, attained a record initial flow of 4586 barrels of pipe line oil. The prolific yield was credited to the Rushwold Oil Company's C. C. Woods-South 2, near SW SE SW T&P Section 36, Block 43, T-1-N, after 620-quart nitro shot in the regular lime horizon at 4195-4381 feet. The well flowed 650 barrels the first 1½ hours, and was holding to 130 barrels hourly at the end of the gauge. It is an indirect north offset to an average size well. Two separate groups failed in their efforts to develop the lease bearing the big well before Rushwold Oil Company accepted lease assignment on an overriding royalty basis.

An exploratory test between the North Cowden field and the Johnson 3-well pool has been negotiated by O. S. Black and Robert Steele. Indian Territory Illuminating Oil Company contributed SW¼ T&P Section 34, Block 43, T-1-S, and pledged a $7500 dry-hole contribution for the drilling of a 4500-foot test in the southwest corner of the tract. Ohio Oil Company posted a dry hole contribution of $2500, and assigned the operators its lease on S½ SW¼ T&P Section 38, offsetting the Johnson pool discovery, with 1/32 overriding royalty retained. Atlantic Refining Company and Sinclair Prairie Oil Company will make dry hole payments.

Gulf Oil Corporation's Waddell et al 10, southeast outpost for the Ordovician pay sector of the Sand Hills field, Crane County, was flowing 11 barrels of high-gravity oil hourly with gas volume rated at 20½ million feet daily. It has penetrated 16 feet of Ellenberger limestone in coring to 5972 feet, and probably will be completed at this depth. The company's Tubb 16, quarter mile east of the new producer, gives promise of making an oil well in the Simpson, having logged show at 5945 feet, and section cored at 5969-78 feet carried saturation. It will drill through the zone before attempting a drill-stem test. Both tests logged top of Simpson about level, but Tubb 16 checked about 100 feet low on the Simpson sand section, which is a more accurate marker for determining structural position.

Another oil zone for the McKnight pool, Crane County, was uncovered by Gulf Oil Corporation's McKnight 5, C SE PSL Section 1, Block 21, which failed to lower the 700-foot fluid level in bailing 112 barrels of oil in 6 hours from lime at 3459-82 feet. The hole is bottomed at 3497 feet, and is carrying a small amount of water from above pay.

The most important test in the north portion of the Permian Basin is Shell Oil Company's Waples-Platter 1, located 3 miles northeast of the Bennett field, Yoakum County. No shows of any consequence have been logged in drilling to 5250 feet, or 1683 feet sub-sea.

Development of the Bennett and Wasson areas, which are destined to be joined by production, remains on a greatly reduced basis since pipe line connections have not been available to new wells for some weeks. The revised proration schedule for April afforded some relief for the single pipe line outlet, but was not sufficient to lift pipe line proration and give an outlet to unconnected wells. Completion of the Aloco Pipe Line Company's 6-inch line to Hobbs late this month may alleviate the transportation situation, since the company is on a deal to gather and transport oil controlled by Shell Oil Company, a big producer in the district. Except for common carrier runs, Aloco Pipe Line Company proposes to confine its operations to properties held by the Aloco Oil Company. Helmerich & Payne, Inc., has been assigned lease

West Texas Completions

Company, Well and Location	Init. Prod. Bbls	Depth
Andrews County (Emma)—		
Osage Drl. Co., University-Phillips 2	1067	4240
Crane County (Sand Hills)—		
Humble, J. B. Tubb 25	2249	4420
Crockett County (Crockett)—		
H. W. Black-Eubank Oil Co., University-Humble 3	50	1370
Ector County (Foster)—		
Arrow Drl. Co.-York & Harper, Inc., Foster 8	826	4312
Shell, Witcher 9-A	1222	4190
Stanolind, Cowden 11-A	1007	4186
Ector County (Goldsmith)—		
Devonian Oil Co., Scharbauer 7-A..	972	4210
Gulf, Goldsmith 170	2208	4210
Goldsmith 172	2324	4188
Goldsmith 174	1132	4163
Goldsmith 176	1400	4200
Landreth Prod. Corp., Scharbauer 4-P	397	4215
Phillips-Pure, Cowden 58	424	4159
Ector County (North Cowden)—		
Sinclair Prairie, Corrigan 4	1058	4356
Howard County—		
Magnolia, O'Daniel 13	670	2795
O'Daniel 15	497	2810
Moore Bros. Corp., O'Daniel 7-A...	304	2807
Jones County—		
Fain-McGaha Oil Corp., Shaheen 4	395	1901
Fain-McGaha & Sinclair Prairie, Olson 3	3296	3222
Bert Fields-Carey King, Humphrey 2	1672	3266
Healey & Walters, Doughtry 6	325	1915
Pearson et al, White-Danciger 1..	39	2360
Petroleum Prod. Co., Steffens 2...	365	1882
Ungren-Frazier et al, N. Smith 1..	3360	3267
Jones County (Wildcat)—		
Jones-Stasney-Groover & Rose, Crow 1	*	3400
Pecos County (Payton)—		
British-American, Payton 13	184	2074
Pecos State Oil Co., Pecos River 6	281	2095
Pecos County (Wildcat)—		
Williams et al, T. P. Land Trust-Humble 1	*	355
Reeves County (Wildcat)—		
Far-West Oil Co. (was Lagoki Oil Co.), Richards-Shaw 1	16	1630
Ward County—		
Gulf, Hutchings 121	781	2785
G. W. O'Brien 107	271	2786
Western Well Service Corp., Lackland 4-6	133	2097
Winkler County (Henderson)—		
W. K. Royalty Co., Walton-Humble 5-D	284	3061
Winkler County (Kermit)—		
Magnolia, Walton 220	514	3185
Winkler County (Keystone)—		
Falcon Co., McCutcheon-Humble 8.	308	3408
Richardson Oils, Bashara 2	267	3400
Yoakum County (Bennett)—		
T. P. Coal & Oil Co., Bennett 19...	2996	5245
Yoakum County (Wasson)—		
Humble, Wooten 8	1104	5130
Shell, Baumgart 3-C	1203	5160
T. P. Coal & Oil Co., Brownfield 1	928	5151

* Failures; † Junked; ¶ Million cu. ft. gas.

by the Ohio Oil Company on the N½ NW¼ Section 797, north end of the Wasson field, with the latter retaining 1/16 over-riding royalty. Two immediate tests are required to take care of offsets.

Three offsets to producers on the south end of the Slaughter field, Hockley County, will be drilled by Western States Gasoline Corporation in acquiring the north 177 acres of PSL Section 11, Block X, from Humble Oil & Refining Company, which is to receive ⅛ over-riding royalty on flowing production and 1/16 from pumpers. Mineral rights below 5500 feet were retained by the latter.

A 5000-foot wildcat project for central Bailey County may materialize through terms reached by two large land owners. Sam Sanders, fee owner of Sutton County School Land League 175 and Hale County School Land League 171, proposes to drill in Labor 2 of the latter league. A $15,000 contribution toward a test has been offered by the Dora Roberts Estate, owner of Sutton County School Land Leagues 172, 173 and 174.

Wm. F. Hanagan and associates are negotiating for a wildcat test in southwestern Andrews County on University of Texas fee, with tentative location on W½ SW¼ Section 25, Block 12.

Pacific-Mid-Continent Corporation's W. A. Tunstill 1, NE NE NW T&P Section 10, Block 56, Township 2, Reeves County, has been deepened to 3550 feet without a production gain. This wildcat was completed last October as a small wet gasser after nitro shot in Delaware at 3278-3305 feet.

West Central Texas Completions

Company, Well and Location	Init. Prod. Bbls	Depth
Brown County—		
Delmarva Oil Corp., Shelton 2	*	594
C. P. Mitcham et al, Newton 1-B	20	1257
W. Thomason et al, Thomason 1	*	1394
Whitesides & Rogers, Newton 5	30	1225
Whitesides & Smith, Mathews-Holloway 1	¶3.9	1475
Windham et al, Moore 2	*	2448
Brown County (Wildcats)—		
Dunn et al, Cox-McInnis 1	*	1412
Ownby Drl. Co., Wright 1	*	1401
Callahan County—		
Bayou O&G Corp., Cavanaugh 6-B	225	1668
Hodges et al, Henshaw 1	*	2126
Keough et al, Clark 1	*	851
Warren & Kleiner, Clark 4	23	740
Clark 5	25	765
Clark 6	*	783
Callahan County (Wildcats)—		
Dobbs Oil Co., Finley 1	†	1785
Petroleum Prod. Co., Morriset 1	*	1763
Westgate-Greenland Oil Co., Yost 1	*	2155
Coleman County—		
Anzac Oil Corp., Morris 3-J	96	2004
Lamb & Kirkpatrick, Nixon 1	*	3027
Texhoma O&G Co., Vaughn 2	*	1158
Coleman County (Wildcat)—		
Kynaster-Bozeman & Culbertson, McCord 1	*	3520
Comanche County—		
Christman et al, Casper 1	*	900
Howard et al, McPherson 1	*	438
McPherson 2	¶1/10	423
Plains Prod. Co., Runkles 1	*	501
Tyler & Eakin, Bettis 1	*	650
Eastland County—		
Gamblin et al, Daniels 2	*	605
Kleiner & Warren, Harbin 1	*	1640
Reeves et al, Connellee 1	12	1244
Erath County—		
Collard et al, Payton 1	*	185
Mills County (Wildcat)—		
Ellis et al, Vaughn 1	*	2785
Parker County (Wildcat)—		
Bartrug & Burns, Lem Lamkin 1	*	710
Rose et al, P. H. Graves 1	*	630
Palo Pinto County—		
Post Oak Oil Co.-Lane & Dilbeck, Dalton 1	12	1240
Shackelford County—		
Butler & Horne et al, Nail 1-B	*	1692
Charter O&G Co.-W. P. Luse, Newell 1	*	1804
Douglas et al, Sedwick 1	*	543
Fox & Son, Nail 2	*	1606
Heltzel & Schkade, Mathews 1-A	*	831
Lee & Key, Diller 13	8	528
Diller 14	12	528
Diller 15	8	534
Diller 16	7	565
Owens-Snebold Oil Corp. et al, McKeever 1	1650	3187
Rhodes & Highers, Davis 16	*	1621
Roeser-Pendleton & Continental, Cook 29-A	131	1367
Taylor et al, Nail 1	*	1551
Tom Wittmer et al, Lones 2-A	*	712
Stephens County—		
Lone Star Gas Co., McKee 1-A	290	4117

* Failures; † Junked; ¶ Million cu. ft. gas.

Callahan County test shows for production

Abilene.—Eastern Callahan County has a shallow wildcat awaiting pumping gauge with an estimated yield of 50 barrels daily. L. A. Warren et al's Cozart 1, M. Cherry Survey, filled 1000 feet with oil in 12 hours after drilling sand at 1660-1675 feet, then made a favorable response to a light nitro shot. It was drilled on the strength of shallow oil sands passed up in the drilling of Phillips Petroleum Company's Cozart 1, which was abandoned early last year in Ellenberger at 4140 feet.

The parting of a string of 5½-inch pipe has caused a fishing job that will postpone a production test of the prospective deep lime discovery in northeastern Nolan County. Chas. Peddicord, Green and Owens' Tipton 1, near SE NW SW T&P Section 43, Block 19, reported last week with oil show in Lower Canyon, logged from rotary cuttings between 4387 and 4464 feet, is the only active test in the county. Top of the Swastika was called at 3590 feet, with an elevation of 1975 feet, and the Adams branch lime at 4083-4150 feet.

Texas commission makes change in tender rules

The Texas Railroad Commission has revised its rules governing Form SW-2 and relating to SW-3 as follows:

The last sentence of Paragraph (a) Rule 4, Section 11 shall be amended to read as follows:

"Under no condition shall a report on Form SW-2 constitute authority for the gatherer filing such a report to deliver the oil so covered to any person or company."

Rule 7, Section 11 shall be amended to read as follows:

"No person or company shall deliver or cause to be delivered crude oil from a gatherer or pipe line company to railroad tank cars, trucks, steamships, or any other person or company or from a pipe line to a refinery, reclaiming or treating plant, loading rack, gasoline plant or between any two of the above mentioned unless and until such person has obtained an SW-3 Tender covering such transfer in conformity with provisions of this order. It is intended by this rule to require the issuance of a separate form SW-3 to cover each change of custody or control of crude oil, regardless of whether ownership changes or not."

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Gray County—		
Continental, Benton 3	602	3210
S. & M. Oil Co., Worley 6	343	3280
Hutchinson County—		
Parton & Holt, Whittenburg 3	72	3036
Rieger et al, Groves 5	184	3250

* Failures; † Junked; ¶ Million cu. ft. gas.

Want acreage proration in East White Point

Plymouth Oil Company has requested straight acreage proration for wells in the East White Point field in San Patricio County, at a hearing before the Texas Railroad Commission last week. This program was approved by the Humble, Texas, Stanolind and the Shell companies. The plan was opposed by owners of small tracts in the field, which is now prorated on acreage and per well with 50 percent allocated on each factor.

Testimony was presented to show that the field was unusually porous and permeable and will average approximately 30,000 barrels per acre from 30 feet of sand, as estimated by J. L. Tatum, geologist for the Plymouth Oil Company.

Riverside spacing and casing ruling issued

The Texas Railroad Commission has issued regulations providing for 20-acre spacing in the Riverside field, Nueces and San Patricio counties. Wells would be drilled 466 feet from lease lines and 933 feet apart.

The rules provide for straight acreage proration, with a maximum of 35 acres assigned to one well for proration purposes. A maximum gas/oil ratio allowance of 2000/1 is provided with a total displacement factor for high gas/oil ratio wells.

The rules provide for 1500 feet of surface casing cemented to the surface and an oil string set with 400 sacks of cement. In order to handle high pressure, operators must use 10-pound mud with a minimum viscosity of 35 pounds, after the well is drilled 200 feet or more below the surface casing.

Texas drilling permits

Permits for drilling 245 new wells in Texas were approved by the Texas Railroad Commission last week, 32 less than were allowed the week before.

One permit was granted in the East Texas field in Gregg County. From the remainder of the East Central Texas territory 25 locations were reported, including 18 in Titus County.

There were 50 locations approved in the Gulf Coast area, while 27 were listed from Southwest Texas. Permits for 44 new wells were approved in West Texas, and West Central Texas was allowed 17.

Panhandle operators reported 26 locations, while North Texas producers listed 55.

Louisiana permits

Shreveport.—Twenty-seven drilling permits were issued last week by the Louisiana Conservation Commission of which 17 were in North Louisiana divided among the following parishes: Bienville, 1; Caddo, 10; Claiborne, 1; LaSalle, 1; Ouachita, 1; Sabine, 1; Union, 1, and Webster, 1. The 10 in South Louisiana were in the following parishes: Ascension, 1; Assumption 1; Avoyelles, 1; Cameron, 2; Evangeline, 1; Lafourche, 1; Plaquemines, 2, and Terrebonne, 2.

North Texas Fields

New market outlet to cause K-M-A drilling boom.

Asylum's second well flows 31 barrels initially.

Wichita Falls.—Resumption of large scale development in the K-M-A deep area, which was the most active drilling center in the southwest at this season last year, and a gradual expansion of exploratory work in recently discovered deep pools in North Texas will result from a new market outlet to be given the district.

An additional market for a maximum of 10,000 barrels daily will be furnished within 60 days by Sinclair Refining Company, pipe line division. The new quota will be sought primarily from the K-M-A field, and possibly the Hull-Silk area, Archer County, and will be more than sufficient to relieve other pipe lines in the district of their surplus connections and still accommodate new completions.

Curtailment of the demand for crude and pipe line congestion forced K-M-A operators to cut short their drilling boom last mid-year. Pipe line proration and the refusal of well connections leveled off drilling during the past six months to an average of 15 active rigs. The field has 934 deep wells, with a base allowable of 28,078 barrels daily, but actual production is considerably below this quota, due to Sunday holidays, pipe line proration by one buyer, and unconnected wells. Reasonable development of the proved area will more than double the present number of wells.

A south offset to the Asylum pool, southeastern Wichita County, discovery well was listed as a completion the past week. Petroleum Producers Company and Continental Oil Company's Finkler 1 flowed 31 barrels of 41-gravity oil with the aid of flow valves after nitro shot and multiple acid treatments of the Bend lime at 4706-13 feet and 5089-41 feet. The hole was plugged back from 5152 feet. The small yield of the two wells does not encourage additional development.

British-American Oil Producing Company's Wilson 1, Archer County wildcat 3 miles south of Mankins, proved dry in the Canyon section at 1389-2404 feet, and was drilling at 2900 feet towards a 5300-foot depth contract. The company's Cope 1, located ¾ mile southwest of its Eastern Baylor County 2600-foot wildcat producer, was drilling at 4920 feet, having failed to produce in the Strawn series, and will be carried to the Ellenberger, or 5500 feet.

George Ross & Company's Bailey 1, southwestern Cooke County wildcat, is awaiting a production test through casing cemented at 1612 feet after logging oil shows in broken sand at 1620-35 feet. It is 8 miles south of Muenster. Development of the Best pool, Walnut Bend sector of Cooke County, will be participated in by Cox and Hamon, Incorporated, which has been assigned leases by The Texas Company on an over-riding royalty basis. Sinclair Prairie Oil Company is drilling two tests that will require east offsets on a 124-acre tract sublet by The Texas Company.

Seitz & Comegys, Limited's L. K. Guerin 1, Montague County wildcat 5 miles north of St. Jo, logged nominal oil saturation in broken sand at 2453-72 feet, and is coring ahead.

North Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County (Hull-Silk)—		
Bert Ligon-Deep Oil Dec. Co., Wilson-McCrory 3, sec 25	1344	4320
Archer County—		
Madden et al, Richardson 4, blk 22	*	1201
Shappell Oil Co., Bell 20, sec 27	120	979
Archer County (Wildcats)—		
Bridwell Oil Co., Schroeder 1, sec 56	*	1875
Shell, J. J. Perkins 1, blk 47	*	1474
Clay County—		
Kimmell-Lee & Co., Firestone 9, sec 23	325	1140
Norwood et al, Duncan 1, blk 15	46	1180
Cooke County (Walnut Bend-Best)—		
Sinclair Prairie, Best 5	1488	4976
Cooke County—		
Snuggs et al, Lee Lewis 2	*	1185
Cooke County (Wildcat)—		
Townsley-Petro et al, K. Fleitman 1	*	1750
Jack County—		
Moncrief-Showers et al, Rogers 1	363	3229
Jack County (Wildcat)—		
Everts et al, J. H. Vick 1	*	2850
Montague County—		
Seitz-Comegys & Seitz, Roach 7-B	150	2140
Wichita County (K-M-A)—		
Consolidated Oil Co. et al, Ferguson 21, lot 11	1560	3785
Deep Oil Dev. Co., Bradley 2	672	3792
E. C. Oil Co., Hodges 4-A	752	3946
King Oil Co., Waggoner Bros. 1-B	504	3874
Wilbarger County—		
Falls Ref. Co., J. L. Owens 2, sec 69	752	2640
Fitzwater et al, Waggoner Est. 1, sec 30	†	726
Golding Est. & Cochran, Waggoner Est. 5-S, sec 30	80	1549
Young County—		
Horwitz & Oldom, Lowe 11, sec 250	6	650
Jennings Drl. Co., J. A. Hutchings 1, sec 230	*	1051
Thos. A. Jirik et al, E. H. Huebner 2, sec 193	*	1095
Magee & Stipe, H. E. Neeley 1, sec 176	12	1134
Nehls-Strong & Tidwell, J. M. Smith 1, sec 638	7	4072
Rathke Oil Co., Elkins 1	†	3585
Underwood Drl. Co. et al, Campbell 36-C, sec 3401	*	930
J. G. Wooten et al, G. P. Stewart 1	5	870
Young County (Wildcat)—		
Dean Bros.-Murray & Griffey, J. C. Vaughn 1	*	4340

* Failures; † Junked; ¶ Million cu. ft. gas.

Missouri test rumored to have had small shows

Trenton, Mo.—Missouri is marking time at the majority of locations within Forest City Basin, with one test spotlighting the news. This well is J. H. Everett et al's Spring 1, SWc SE 30-62n-38w, Holt County, drilling below 2000 feet as the week closed. Although held close and rated as a mystery well, Spring 1 had a slight show of oil and gas at 1060 feet and another at slightly below 1900 feet. Neither show was considered of commercial significance. Salt water was encountered with the last showing.

Other operations now under way or prospective are Birkett-Gillespie-Bradley's tentative Livingston County location at CSL SE NW 22-58-23w and their tentative Andrew County location, CSL N½ NW SE 28-60-35w; H. V. Elwell et al's Taylor 1, SW NW NE 12-62-21, Sullivan County, west of Milan, a standing rig; Frank Hopper et al's Black 1, NW NW 36-52-32w, Clay County, spudding; George Moore's McQuate 1, NEc SW SW 11-57-31w, spud; E. L. Bennight et al's Howerton 1, NEc 19-61-12w, location; Charles G. Delfeld's Turner 1, CNW NW 27-59-99w, spud and shut down; C. E. Richardson's Jones 1, CNW NW 16-58-17w, Macon County, a location, and Patsy Oil Company's Holt County test, Gaffney 1, SWc SE SW 24-63-40, a rotary rig. Eastern Drilling Company has spudded and shut down their Williams 1, NWc NE 28-53-32w, Clay County.

Fell pleads for greater limitations on imports

Harold B. Fell, executive vice president of the Independent Petroleum Association of America, was the principal speaker when 106 operators of Western Kentucky, Southern Illinois and Indiana held a dinner meeting at Owensboro last week to discuss current problems facing the industry. Fell discussed the national organization's five-point program first adopted several years ago and reaffirmed at the group's annual meeting last fall.

Speaking of the present excise tax of 1 cent per gallon on crude oil and gas oil imported, 2.5 cents per gallon on gasoline and 4 cents per gallon on lubricating oil, which he said "were established in 1932 as the direct result of the campaign conducted by the Independent Petroleum Association of America for three years," he urged even greater limitations on imports.

"It is our belief that these taxes should be increased and, that to insure against future floods of foreign oil which may result from the aggressive exploratory campaign now going on in South America, an additional safeguard should be established in the form of legislation which would limit the imports to a definite place in the demand for consumption in the country," Fell said.

While maintaining there is need of a federal agency for control in the marketing field, Fell declared that the problem of excessive drilling could be met by cooperation as "there are instances where the producers could enter into agreements that would be helpful in carrying out the program which we know would be beneficial if they but felt free to do so."

Paul Blazer, vice president of Ashland Refining Company, deplored sale of crude in some areas at distress prices. He declared that oil in the Salem pool of Illinois has been sold for as little as 50 and 60 cents a barrel. There is no immediate prospect of a change in crude prices in Western Kentucky, Blazer said, as the industry is rapidly becoming stabilized.

Other speakers at the meeting were Earl D. Wallace, president of the Kentucky Oil & Gas Association and a member of the Independent Petroleum Association of America's "Special Study Committee of 36," and Charles VanVleck, field manager of the association. Presiding at the meeting was W. H. Keffer, secretary-treasurer of Ashland Refining Company.

East Texas Fields

Slight upturn in drilling indicated in big field

Kilgore, Texas.—A slight upturn in the volume of drilling in the East Texas field is anticipated on the strength of new permits granted by the Railroad Commission. No large companies have operated rigs for several weeks, and smaller companies only had two in service, according to the current report.

Magnolia Petroleum Company is starting work on W. M. Jernigan 13, located on a 79.66-acre lease, northern Rusk County, to offset a completed well.

The plugging of depleted oil wells in the field continues at a brisk rate. The latest weekly report lists 11 wells as being pulled, including 3 on The Texas Company's Kersh lease, Joiner area, and 3 on Magnolia Petroleum Company's Nadine Utzman lease, near Kilgore townsite.

Permit issued for disposal wells in East Texas field

Humble Oil & Refining Company has been granted permits by the Texas Railroad Commission to drill two wells in the East Texas field for returning salt water to the base of the Woodbine.

The commission has also set for hearing on April 10, application by Ohio Oil Company for permits to drill four disposal wells in the South Joiner and Graham Lake areas in Western Rusk and Smith and Cherokee counties.

Joaquin south extension test to go to Travis Peak

Shreveport.—Having failed to find sufficient porosity or saturation in the Glen Rose lime to indicate production, Neal & McDaniel's C. W. McDaniel 1, William Snyder Survey, Shelby County, Texas, south of production at Joaquin, was coring ahead at 5183 feet, to determine Glen Rose lime water level before proposed drilling to the Travis Peak, expected about 6200 feet.

Shell Petroleum Corporation has secured geophysical option on 50,000 acres of Gilmer Lumber Company land in Sabine, Jasper and Newton Counties, and according to the option, selections are to be made in blocks of 4000 acres. The leases in Sabine County totaling about 12,000 acres surround Yellow Pine where several years ago Humble Oil & Refining Company core drilled extensively and then forfeited all its holdings. Shell's interest is believed based on a theory that deeper structures are not necessarily reflected by shallower beds. North of Hemphill in the same county, R. M. Garrett is leasing around the James Mason Survey, taking 10-year leases. All of E. B. Larue's leases in southern San Augustine County have now been assigned to Gulf Oil Corporation.

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
R. F. Lane Drl. Co., Tyiska 5 (50-ac)	1200	3815
Kilgore Area—		
Lacy et al, J. M. Johnson 2	6000	3548
McVey et al, N. Dickson-Laird 5	600	3560
Overton Ref. Co., A. Protho 3 (1.15-ac)	960	3565
Longview Area—		
Yeager & Schubert, Finley-Thomas 8 (11.88-ac)	6500	3510
Anderson County (Long Lake)—		
F-H-E Oil Co., Monnig Bros.-Tidal 1	*	5302
Cherokee County (Wildcat)—		
Lanier et al, A. T. O'Neal 1	*	3912
Franklin County (Talco)—		
Humble, Norman-Prince 6 (127.67-ac)	150	4323
Henderson County (Flag Lake)—		
Texas Co., Trinity Farms 1	163	3005
Titus County (Talco)—		
Hughes et al, Flannigan-Shell 2	436	4334
Upshur County (Wildcat)—		
Johnson et al, L. Parker 1	*	4004

* Failures; † Junked; ¶ Million cu. ft. gas.

Operations halted on two Woodbine belt wildcats

Tyler, Texas.—Operations have been halted on two wildcats in the upper portion of the Woodbine belt. George Strake et al's Farrier 1, northwestern Wood County, fulfilled depth contract at 6503 feet, and may plug back to test minor oil saturation logged in the sub-Clarksville section. Top of the Georgetown lime was logged near the 4800-foot level. In eastern Upshur County, Gaskill Oil Corporation's Arnold 1, two miles southeast of Jamestown, found the Woodbine absent due to its close proximity to the shore line, and quit in Georgetown at 3677-90 feet.

Preliminary gauge given Humble Oil & Refining Company and Sun Oil Company's Swift 1, northeastern Leon County, a 4½-mile northwest extension for the Navarro Crossing field, credits the well with flowing 4 barrels hourly through 3/16-inch choke with a trace of water. Production is from gun-perforations in the casing between 5841-43 feet. Opposite the thin section of oil sand water was logged at 5849-5906 feet, with an elevation of 224 feet. The partnership's W. O. Harris 1 is being started as a northwest offset.

Chapel Hill gas-distillate pool, eastern Smith County, is to be given a second test through the joint operation of Sun Oil Company and Hunt Oil Company. A unit block that will be voided in the event oil production is developed from the Lower Trinity is being formed near the latter's discovery, which is supplying high pressure gas for the operation of numerous nonflowing wells on the west side of the East Texas field.

Keeran spacing

The Texas Railroad Commission has issued an order providing 20-acre spacing for wells in the Keeran "Deep" field, Victoria County. Wells must be spaced 466 feet from lease lines, but may be only 850 feet apart.

The rules call for straight acreage proration with a maximum of 20 acres assigned to one well. The maximum gas/oil ratio allowance of 5000/1 is included with a total displacement factor for high gas/oil ratio wells. Operators must set 1250 feet of surface casing cemented to the surface, and an oil string set with 300 sacks of cement.

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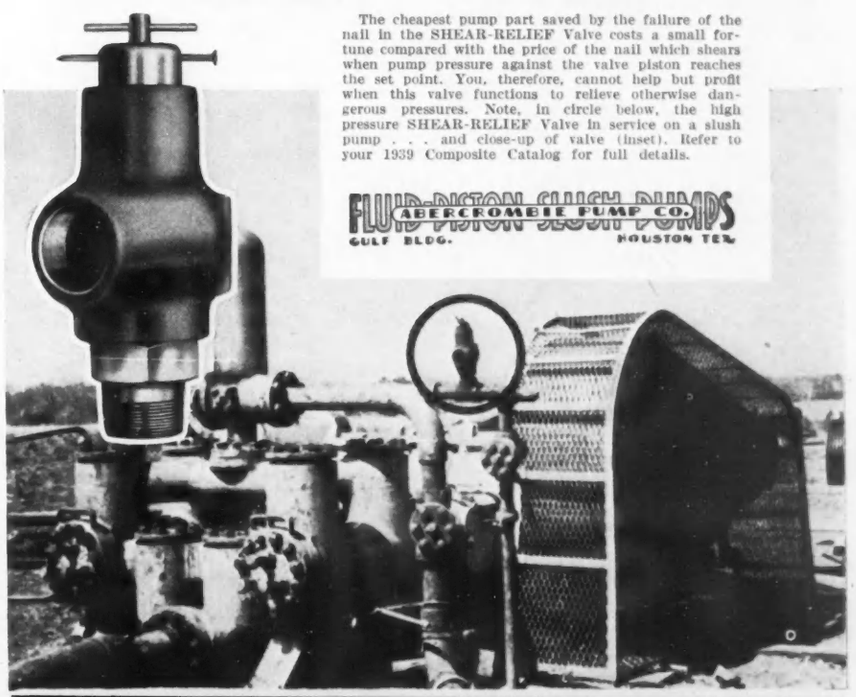

SHEAR-RELIEF VALVE

Southwest Texas Fields

Wellington opens new sand in Clara Driscoll field. Quintana assures Melon Creek mile south extension.

Corpus Christi.—Discovery of additional producing sands gives rise to a further expansion in the deep drilling program along the South Texas Gulf Coast. Clara Driscoll field of Nueces County, scene of one of the active plays at this time, had a new sand uncovered 900 feet deeper than the present deepest level. In addition, several sands were indicated between the former and the new level in the field. Wellington Oil Company of Delaware's C. R. Richardson 1, Section 111, south end of the pool, was carried to 7520 feet, perforated at 6557-66 feet, and flowed 151 barrels of 37-gravity oil in 24 hours through ¼-inch choke under pressures of 200 pounds on tubing and 475 pounds on casing.

Shell Petroleum Corporation's Griffith 1, north of the discovery oil producer of the Riverside pool, also Nueces County, failed to make a producer and was carried to 7510 feet before being abandoned.

A mile south extension to the Melon Creek pool of Refugio County was considered assured with casing being landed near 5900 feet in Quintana Petroleum Corporation's Tom O'Connor B-3, T. Hoyt Survey, Abstract 174. The field was opened several months ago by the Copano Oil Company, which has drilled several offsets to the original producer. The new well is the first to be drilled in wildcat territory. While no information concerning the well has been released, it is understood that the test cored an excellent sand body.

Also in Refugio County, Woodsboro field received its second gas producer in a material northwest extension, Rutherford Oil Corporation et al's M. L. Oppenheimer 1, A de la Vina Survey, made a gasser through perforations at 4194-98 feet, showing 1425 pounds pressure on tubing and 1700 pounds on casing. It has been drilled to 6505 feet, but plugged back to open the new sand.

Windsor Oil Company is continuing to test Powers 1, about 4000 feet northeast of Tomoconnor field of Refugio County. The well, after being drilled to 6516 feet, plugged back to test a sand at 5935-47 feet. First tests through perforations at 5938-41 feet netted salt water and new perforations were being made after a squeeze job.

Efforts were being made to control a cratering well on the west side of the Cordelle field of Jackson County. H. J. Porter et al were coming out of the hole at 2577 feet in Yassi 1 when the well started blowing out from several craters, one being 1000 feet south of the drill hole. Attempts were made to pump mud, but it now appears that it will be impossible to control the unruly flow of gas, apparently coming from sand at 2573-77 feet.

After testing salt water at 7280-7410 feet, Mills Bennett was testing at 7448-54 feet in G. A. Lawrence 1, Francitas field, Jackson County.

Tom Graham Oil Company's N. O. Adams 1, nearly one mile east of the discovery gasser of Clark, Jim Wells County, has been abandoned at 5850 feet. The test made several tests in sand at 4923-40 feet, but each showed salt water.

Jim Wells County is the center of an active new wildcatting campaign, the majority of the wells being projected to the Jackson formation. This county has contributed three of the six fields discovered in South Texas since the first of the year. The newest campaign, involving a dozen deep tests, may further increase this record.

South Texas Completions

SAN ANTONIO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bexar County—		
Putnam, Wetz 15 (Von Ormy)	4	698
Caldwell County—		
Ogden, Moore 3 (Dale).....	40	2400
Lee County—		
Pederson, Brown 1 (WC) 2 mi s Tanglewood	5	6424
Milam County—		
Jones, Coffield 6 (Minerva-Rockdale)	2	641
Krause, Graves 1 (WC), 8 mi s Buckholts	*	910

CORPUS CHRISTI DISTRICT

Jackson County—		
Lewis, Drushell 6 (Cordelle)	325	2707
Jim Wells County—		
Henshaw, Inglott 1 (East Alice).	*	abnd.
Nueces County—		
Carlos, Blucher 1 (Turkey Creek-Saxet)	¶5	4082
Richardson, Perkins and LeGasse 9 (Saxet)	100	5840
Refugio County—		
Quintana, Heard 32 (Tomoconnor).	1750	5894
Williams 8 (Tomoconnor)	1400	5925
San Patricio County—		
Bryant, Losoya 1 (McCampbell)...	1000	7145
Grote and Corgey, McCampbell 5 (McCampbell)	1100	7160
Humble, Speer-Fee 4 (East White Point)	500	5680
Richardson, Sherwood 1 (McCampbell) (WC)	*	9074

LAREDO DISTRICT

Duval County—		
Cullen & Mayo, Hoffman 1 (WC), 3 mi w and s of San Diego.....	*	6135
Magnolia, DCRC 5 (189) (Cedro Hill)	50	1443
Jim Hogg County—		
Dillard, Ramirez 1 (WC), 2 mi s Alworth pool	*	3011
Webb County—		
Brazos-Young, Bruni 1 (WC), 5 mi s Aguilares	*	4305
Ohern and Ryan, Garcia 3 (Killam)	41	1989
Zapata County—		
Buffalo, Hinnant C-4 (Mirando Valley)	134	1963
Nordan and Morris, Haynes 15-C (Comitas)	*	1216

* Failures; † Junked; ¶ Million cu. ft. gas.

Two Glen Rose wildcats are started near San Antonio

San Antonio.—Two Glen Rose sand wildcats are being started in the immediate sector of San Antonio. F. B. Dickson's Dickson 1, in the Villareal survey, 10 miles northeast of San Antonio in Bexar County, is drilling below surface casing. This test, being dug with cable tools, likely will be carried to 2000 feet. In addition, Maco Stewart & Son's D. F. Davis 1, two miles south of Dunlay and in the Patillo Survey, Medina County, is projected to at least 3500 feet.

Kelsey-Sun area gets two new sands and extensions

Mission.—Two wells have opened two new sands and have provided important extensions to the prolific multiple sand Kelsey-Sun district at the corner of Jim Hogg, Brooks and Starr counties. One definitely established crude oil production for the Jackson formation, first for this immediate sector.

Humble Oil & Refining Company's McGill Brothers 5, on the Brooks County side of the Kelsey pool, flowed 63 barrels of 42 gravity oil per day through 3/16-inch choke under pressures of 850 pounds on tubing and 1200 pounds on casing. Casing had been perforated at 6102-6108 feet. The well, after showing gas in the discovery sand at 4655-5662 feet, was drilled to 6314 feet. It found a sand at 6099-6108 feet and another at 6223-6231 feet. Both of these sands are considered to be deep in the Jackson zone. The completion gives the field two producing levels.

Sun Oil Company was finishing George H. Speer 1, located 7600 feet west of crude production in Sun, of Starr County. The test, near the northwest corner of Section 238, was in sand at 4963-4972 feet, but was completing through 30 perforations at 4966-4972 feet. It had been carried to 5188 feet, being bottomed in salt water sand.

McCollum Exploration Company is credited with dealing for the properties of various companies in La Blanca field, Hidalgo County. Pantano Petroleum Company has been working on a recycling project in the area, using the same wells to produce gas and distillate from the 7500-foot sand and returning the gas to the 7800-foot level.

Pettus sand field opened by Coquat and Amselma

Laredo.—Mirando district added another Pettus sand oil field during the past week as Henderson Coquat and Amselma Oil Company were completing Southland Life Insurance Company 1, located in the southeast corner of Section 7 of the Ball Subdivision, several miles south of the town of Sweden. While the field has not yet been named, it undoubtedly will be called Agua Poquita, as the test is near the banks of a creek bearing that name.

The well found Pettus sand in a solid body at 5286-98 feet and on a drill stem test at 5286-98 feet built up 100 pounds pressure in 7 minutes, 160 pounds in 20 minutes, at which time the tool was closed. In 30 minutes, the well flowed pipe line oil. Recovering the drill pipe, 1500 feet of oil was taken from the hole. A previous drill stem test at 5286-92 feet developed 160 pounds pressure and recovered 325 feet of oil in 20 minutes. Casing was set and plugs were being drilled late in the week.

This discovery is on a 240-acre farmout from the Hiawatha Oil & Gas Company. The latter concern has made a tentative location for an east offset. It is the third oil field to be opened by Coquat on this block. He drilled the Hiawatha Oil & Gas Company discovery of the Sweden field on contract. He then took a farmout from the company and drilled the discovery of the

Longhorn pool. Now, on another farmout he has drilled a new discovery. The field is about 2 miles southwest of the production in the North Sweden field, but likely is not connected to it.

The majority of the other wildcats in the area were uneventful, several being abandoned. Republic Production Company's Society for the Propagation of the Faith 1, southeast of Freer, had completed its 4000 foot contract and was awaiting orders. Cullen & Mayo abandoned Hoffman 1, just west of San Diego, while Luling Oil & Gas Company's Dimmitt 1 at the south end of Duval County, was coring around 5750 feet and appearing to be a failure.

Three wells were active in the new White Creek shallow field on the Live Oak-McMullen County line. Gage et al's southwest outpost is drilling, while Luling Oil & Gas Company's northeast outpost is ready to commence. Brauer et al's south offset to the discovery, likewise, has been commenced. Two new tests will further define the newly discovered Campana field of McMullen County. William Spice, discoverer of the pool, is starting a well 3/5 mile east of production while Lefevre et al's northeast offset to the first well has been started.

Jim Wells producer opens new field or extends Alfred

San Antonio.—A new oil pool or a 1½-mile southwest extension to the Alfred field of Jim Wells County appeared a certainty in Ike W. Howeth's O. S. Adams 1, in the south corner of a 250-acre lease in the William Adams Survey, Section 122. On a drill-stem test at 4667-74 feet, in the basal Frio, the test recovered 500 feet of 47 gravity oil and 100 pounds pressure in 10 minutes. It showed 1900 pounds bottom-hole pressure. Casing was to be set for completion.

The test is 637 feet northwest of a test drilled some time ago by Edwin M. Jones, which indicated a producer in the same sand.

Entertainment planned for safety engineers

The night before the safety meeting at Houston Oil World Exposition, scheduled for April 28, the committee in charge has planned entertainment for the safety engineers, field men, oil company employees and friends at a local cafe at 6:30 p.m., April 27. Tickets may be purchased from William Grant, Jr., Humble Oil & Refining Company, Baytown, Texas, and from C. B. Boone, Gulf Casualty Company, Houston.

Geologic names

A "Lexicon of Geologic Names of the United States" has just been issued by the U. S. Geological Survey in two volumes totaling 2396 pages. It is Bulletin No. 896, and can be had from the Superintendent of Documents, Washington, D. C., for $2.50. Data on all formations from Aarde shale to Zypsie sand is included, definitions stating briefly the lithology, thickness, age, underlying and overlying formations, and type locality. The compilation was made by M. Grace Wilmarth.

Texas Gulf Coast

Algoa wildcat gets salt water on production test.

New sand well at League City goes to salt water.

Houston.—Wynn Crosby Drilling Company's Wilson 1, Algoa prospect, A. G. Reynolds Survey, Brazoria County, looked disappointing last week when salt water was recovered on a production test. This wildcat which had appeared to be the discovery well of a new field after cores and electrical log indicated oil sands, was drilled to 9504 feet in shale, where 7-inch casing was set. It was perforated at 9464 to 9470 feet, reported the best sand cored. The company operators will make further tests on the well at different horizons where broken shows were logged.

North of production at Call, Newton County, Sun Oil Company's Peavy-Moore Lumber Company 1, T. & N. O. Survey, No. 3, was drilling at 7700 feet in a sidetracked hole last week. The well previously was drilled to 7858 feet in water sand, topped at 7836 feet. The hole was plugged back to 7010 feet and sidetracked at 7068 feet. Salt water sands were cored at 7536 to 7558 feet, oil sand from 7507 to 7508 feet and water sands from 7508 to 7512 feet.

On the southwest side of League City field, Galveston County, Gulfboard Oil Company and Salt Dome Oil Corporation's Ross-Stewart 2 was tested in a new horizon last week and came in flowing washwater and oil for nine hours and then went to 90 percent salt water. It was perforated with 24 shots from 8695 to 8700 feet. Tubing pressure was 1150 pounds and casing pressure was 2050 pounds.

Hebert & Smith's S. Turner 1, east of China, Jefferson County, drilling in salt water sand at 5992 feet at the end of the week, according to reports is running a little high. Discorbis was logged at 5330 feet and Heterostegina at 5660 feet. Coring for the Frio sand will start soon, and the outcome of the wildcat should be known next week.

Northwest of Aldine, Harris County, J. H. Woodward et al announced location for Miller Estate 1, 1250 feet south of the north line and 550 feet east of the west line of a 285-acre tract in the J. Skorupski Survey.

Drill Stem Tests Fail

One mile east of production at Turtle Bay field, Chambers County, Stanolind Oil & Gas Company is shut down on Lotz 1, G. B. Jamison Survey, at 6780 feet after attempting two drill stem tests which failed. The tests were attempted from 6545 to 6552 feet. A gas sand was cored in the well at 6555 to 6556 feet. Top of the salt water sand was logged at 6700 feet.

South of the first Wilcox producer at Ace field, Polk County, Shell Petroleum Corporation's Doucette 1, P. A. Sublett Survey, was preparing to run casing at 8553 feet. A 15-minute drill stem test at 8407 to 8427 feet recovered mud and a faint blow of gas. The well is below the Wilcox sand found in Payton Brother's discovery well.

Fairbanks Extended

Northwest of Fairbanks production, Sinclair-Prairie Oil Company's Frazier 1 was abandoned at 7121 feet last week in salt water sand topped at 7112 feet. The Fairbanks sand was pinched out in this area. Northeast of production, Union Producing Company's Murphy 1 flowed 214 barrels daily through a quarter-inch choke from a new sand. The tubing pressure was 300 pounds and the casing pressure was 1150 pounds. The well was perforated from 7020 to 7030 feet. Between the Fairbanks and Satsuma fields, H. E. William et al's Cruice 1, T. Hogan Survey, was abandoned at 7000 feet after coring salt water sands at 6984 to 6985 feet and from 6994 to 6996 feet.

Hargrove & Hunter's Griffith 1, 500 feet northwest of J. W. Frazier's Griffith 1, which logged oil sands in the Miocene formation, was abandoned last week. This Harris County wildcat was drilled to 4139 feet and cored sand with no shows at 3432 to 3448 feet; sand with a gas odor from 4070 to 4078 feet, and salt water sands from 4083 to 4090 feet. An electrical log was run.

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Anahuac—		
Gulf, Peterson 1	632	7125
Bammel—		
H. M. Harrell, Bahr 1	¶40	6218
Sweeny Estate 1	*	6501
Barbers Hill—		
Texas Gulf Prod., Kirby Pet. Co., 27-B	501	5198
Damon Mound—		
B. Wilkerson et al, Munson 1	*	1830
Dickinson—		
Humble, Fream 5	766	8102
Fairbanks—		
Amerada-Stanolind, Chacey 2	183	6855
Mills 11	141	6856
Smith 5	149	6853
White 6	207	6850
Sinclair Prairie, Frazier 1	*	7121
Union Prod. Co., Murphy 1	214	7030
Friendswood—		
Humble, West Fee 13-B	595	6225
West Fee 15-B	614	6040
Hardin—		
Humble, McMurtry 2	508	7575
Hastings—		
Stanolind, Autrey 9	731	6080
Moore C-10	714	6080
Stanolind, McCarthy-Williamson 1	¶7½	7300
Pierce Junction—		
Hamil & Smith, Perry 1	*	4876
Satsuma—		
H. E. Williams et al, Cruice 1	*	7000
Tomball—		
Humble, Theis A-2	240	5595
Turtle Bay—		
Stanolind, State 5-40	100	6602
Withers—		
Smith & McDannald, Broussard Peters 1	118	5547
The Texas Co., Broussard 5	112	5547
Montgomery County—		
H. A. Pennington & Cartwright, Banker 1, sw of Conroe, Washington sur	*	1033

* Failures; † Junked; ¶ Million cu. ft. gas.

C. P. HARRIS, oil operator making his headquarters in Lampkin, Texas, was killed in an automobile crash near Altamont, Illinois, last week. He had recently entered the Illinois field, locating at St. Elmo.

Washington.—Production of natural gasoline failed to keep pace with the upward trend in crude oil production in February, but dropped from 4,264,000 barrels in January to 3,747,000 barrels, it was reported April 7 by the Bureau of Mines. The daily average output for the month was 134,000 barrels, compared with 138,000 barrels in January.

Lower February output, the bureau disclosed, was due to decreases in Louisiana and in the Oklahoma City and Kettleman Hills fields.

Total stocks increased slightly during the month, a material decline in refinery stocks, from 2,833,000 barrels to 2,485,000 barrels, being outweighed by a gain in stocks at plants and terminals from 1,814,000 barrels to 2,223,000 barrels, it was stated.

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South Louisiana

St. Bernard Parish wildcat flows 480 barrels fluid. Well southeast of Eola running normal on structure.

Lake Charles.—Vendome Petroleum Corporation was testing Kennelworth 1, east of St. Bernard, St. Bernard Parish, April 7, after it indicated it would open the first oil field for St. Bernard Parish. The test was perforated last week with 66 shots from 10,608 to 10,626 feet, and a 78-minute drill stem test was made through ¼-inch chokes. Packer was set at 10,584 feet with a 3000-foot water cushion. The first 23 minutes the well was making oil; 15 minutes later it was flowing 70 percent salt water and 30 percent emulsion. The oil tested 34 degrees; tubing pressure was 775 pounds. Later the chokes were changed from 3/8 to 13/64-inch. Tubing pressure was 1000 pounds and casing pressure was 500 pounds. On a two-hour gauge the well flowed at the rate of 480 barrels fluid daily, 35 percent basic sediment and salt water, 5 percent drilling fluid, and 60 percent oil.

Southeast of production at Eola, Avoyelles Parish, J. Edward Jones' Haas Investment Company 1 was drilling in shale below 6525 feet last week, and is reported to have topped the Vicksburg around 5903 feet, which is level with the discovery well. The Jackson was logged at 6264 feet, also level with Sid Richardson's Haas Investment Company 2. The operators are drilling ahead and are not coring for the formations but are picking them by cuttings. If this well continues to run on structure as it is at present it probably will make an oil well. The operator is reported making location for Sam Barone 1 on the tract purchased last week from Roper and Todd. Northeast of production, Pomo Petroleum Company's Sentell 1 was drilling at 8430 feet last week and had not picked up the Wilcox sand. The well, about 30 feet lower than Sid Richardson's Haas Investment Company 3, is expected to pick up the producing sand over the week-end.

South Roanoke Extended

South Roanoke field, Jefferson Davis Parish, was extended ½ mile southwest last week when Continental Oil Company completed Joe Sturdivant 2. The well came in flowing 181 barrels of 52.6 gravity oil daily through 5/32-inch choke. Tubing pressure was 4800 pounds and casing pressure was 400 pounds. The extension was drilled to 9920 feet in shale and had oil sands at 9824 to 9909 feet.

Bel Oil Company's Bel Estate 1, North Elton prospect, Allen Parish, was drilling in shale at 7015 feet last week. The Heterostegina formation was logged at 5785 feet. The wildcat cored oil sands 6035 to 6051 feet and water sands from 6051 to 6080 feet.

Shell Petroleum Corporation's potential discovery well on the LaPice prospect in St. James Parish is still coring ahead in broken oil sands. Schexneyder 1 was down to 10,940 feet in shale and lime. Last week cores at 10,928 to 10,932 feet showed fine sand with a good odor of oil as did those from 10,932 to 10,936 feet. This wildcat has already shown 17 stands of pipe line on a drill stem test at 10,376 feet.

On the Lock-Moore prospect in Jefferson Davis Parish, Bleakie et al have made location for Lock-Moore Lumber Company 1, 300 feet north and 300 feet east of the center of Section 29-7s-6w.

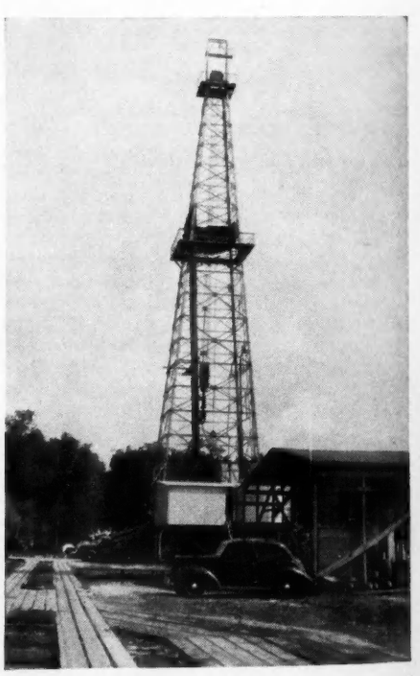
To Test Flank Sand

On the flank of New Iberia field, Iberia Parish, The Texas Company will attempt to open a new producing horizon with Renaudet 1. The hole was drilled to 9313 feet in salt, topped at

South Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Chalkley—		
Humble, Cameron Parish School Board 2	432	8668
Charenton—		
St. Mary Oil Co., Robichaux 6	*	2756
North Crowley—		
Humble, Federal Land Bank 2 (wo), dr to 8776 ft, pb and comp.	373	7741
South Roanoke—		
Continental, J. Sturdivant 2	181	9920
West Hackberry—		
Superior, Kaough 2-C	395	6750
Cameron Parish—		
Superior, Sells 2	*	6880

* Failures; † Junked; ¶ Million cu. ft. gas.



Vendome Petroleum Company's Kennelworth 1, which opened a new field for South Louisiana and the first for St. Bernard Parish. It was completed at 10,626 feet.

9293 feet, and 1322 feet of 6⅝-inch casing was set at 9283 feet. The operators took 12 side wall cores from 8930 to 8970 feet and probably will perforate casing in this horizon. On the flank of Fausse Point, Iberia Parish, The Texas Company is waiting on 5-inch casing to set on State Fausse Point 5. The hole is bottomed at 12,125 feet in water sand; 9⅝-inch casing has been set below 9000 feet.

On the White Lake prospect, Vermilion Parish, Louisiana Land & Exploration Company has made location for Louisiana Fur Company 1, 3200 feet east and 225 feet south of the southeast corner of Section 16-15s-1e, but in Section 22-15s-1e. This wildcat is being drilled on a geophysical prospect taken by Louisiana Land & Exploration Company several years ago. This is one of the few wildcats that has been drilled by Louisiana Land & Exploration Company, which usually farms out prospects.

Second Chalkley Well

Humble Oil & Refining Company completed its second oil producer at Chalkley field, Cameron Parish. Cameron Parish School Board 2 was perforated at 8664 to 8668 feet and it came in flowing 18 barrels per hour through 3/16-inch choke with tubing pressure of 1300 pounds. Humble's discovery well flowed gas and distillate at 8562 feet. Its first commercial oil well was completed at 8959 feet. The company has made location for Hanszen 3, 440 feet north and 990 feet west of the southeast corner of Section 9-12s-6w.

On the Trilby prospect in Acadia Parish, T. G. Markley has made location for Vincent 1, 2981 feet north and 1676 feet west of the southeast corner of Section 19-7s-1w. Markley has drilled several wells in this same area.

Superior Oil Company has quit another semi-wildcat north of Creole field, Cameron Parish. Sells 2, was abandoned at 6880 feet in a sidetracked hole.

At Cameron Meadows field, Cameron Parish, Burton Oil Company is drilling a deep test. Last week School Land 26 was down to 7940 feet in shale and six feet of oil sand, potentially a new pay, was cored from 7761 to 7767 feet. This show of oil may be tested after the company has explored deeper.

On the Amelia prospect in Terrebonne Parish, Shell Petroleum Corporation made location for Ells 1, 467 feet north and 127 feet west of the southeast corner of Section 66-16s-14e. This geophysical prospect was taken by Shell Petroleum Corporation in 1937. Humble Oil & Refining Company drilled a 10,254-foot dry hole in the area and dropped a large spread of leases but still retained several hundred acres. The Texas Company also holds leases in the district.

Reddell prospect, Evangeline Parish, will receive its first Wilcox test when Continental Oil Company and Humble Oil & Refining Company drill L. Manuel 1. Location was made last week for the wildcat 1500 feet east of center of Section 32-4s-1w, but in the northeast part of Section 33-4s-1w. Humble's Haas 1 drilled on this prospect some time ago, was abandoned at 8014 feet in Vicksburg formation after having a showing of oil at 6627 to 6631 feet. Continental and Humble's Pardee Lumber Company 1 was drilled to the Cook Mountain formation in May, 1937, and was abandoned at 8875 feet.

At Villa Platte, Evangeline Parish, Continental Oil Company's W. L. Tate 1 was coring in sandy shale at 10,300 feet, Wilcox formation. According to reports the well logged tight sand with odors of oil in the Wilcox. Continental also is drilling in Vidrine 1 at 9525 feet. It was abandoned some time ago. The hole has been cleaned out to prospect for the Wilcox formation.

The California Company has abandoned its first wildcat in South Louisiana. Schwing 1, Bayou Sorrel area, Iberville Parish, was drilled to 11,388 feet and encountered a hot salt water flow. The hole was first drilled to 10,106 feet and 9⅝-inch casing was set at 8451 feet. Several sidetracking operations were necessary before the hole finally was bottomed at 11,388 feet.

Louisiana state leases

Baton Rouge, La.—Leases on approximately 65,000 acres in 20 different tracts were awarded April 4 by the Louisiana State Mineral Board. The tracts were mainly located in Avoyelles, Bossier, Caddo, Beauregard, Concordia, Grant, Iberia, Jefferson, Vermilion, West Feliciana, and Pointe Coupee Parishes. Bids offered on 14 tracts comprising approximately 35,000 acres were rejected. The leases awarded brought approximately $148,175, the regular one-eighth royalty and in many instances an additional overriding royalty for the state. Since the state mineral lease board has been functioning, which is approximately one year, it has awarded leases on approximately 250,000 acres.

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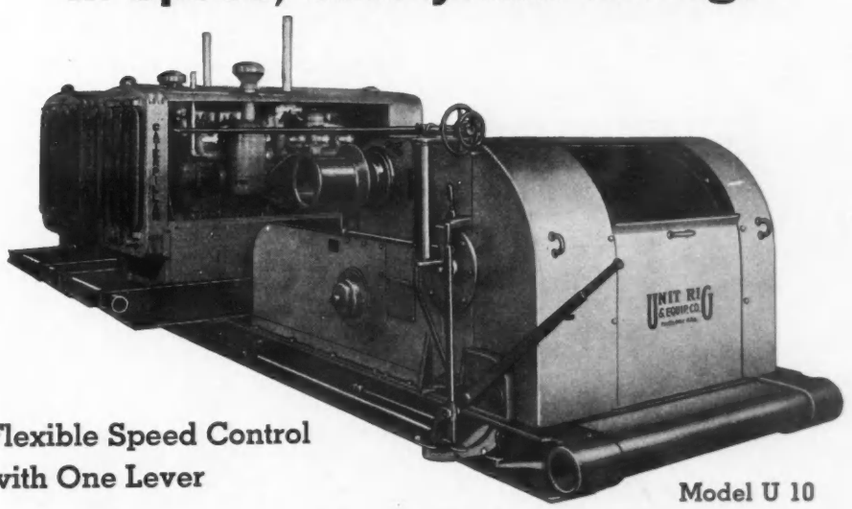

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North Louisiana Fields

Shongaloo discovery well flows 250 barrels from Marine. "Stray" sand has been logged in two previous tests.

Shreveport.—What appeared to be the discovery oil well of the Lower Marine horizons in the Shongaloo field, Webster Parish, made 250 barrels of 49.8-gravity crude oil in 24 hours last week through 5/18-inch tubing choke, with a small amount of wash water, tubing pressure being 400 pounds and casing pressure 600 pounds.

The well is Magnolia Petroleum Company's Roseberry Unit 1, C NE 29-23n-9w, which made only 18 barrels of distillate in 15 hours when tested at 9350 feet and was plugged back to 9250 feet and 5½-inch casing set at 9318 feet was perforated with 50 shots from 9155 to 9182 feet where porosity and a showing of gas and distillate had been logged. After being swabbed several hours the well was shut in overnight and when opened Wednesday flowed 40 barrels of oil in 40 minutes and then was choked off. Swabbing revived the flow and the first 24-hour gauge showed 250 barrels through the 5/16-inch choke.

Although spoken of as a "stray" sand at Shongaloo, operators said the same sand with showing of gas and distillate had been logged in the other two deep wells of the field, Frank Sexton 1, Section 32-23n-9w, deep discovery well, and H. M. Branton 4, Section 6-22n-9w, but was not tested in either of the previous wells. This may lead to deeper exploration at Cotton Valley as the Shongaloo producing horizons are from 800 to 1000 feet deeper than the "F" or deepest of six known lower Marine sands productive at Cotton Valley.

Aside from flank production at Cotton Valley, the new well at Shongaloo is the first oil producer from the Lower Marine in North Louisiana. This horizon produces oil at Schuler, Union County, Arkansas, where it is known as the "Jones" sand.

Two new wells, bringing to 19 the number of basal Glen Rose lime oil wells, were completed last week in the Shreveport field, which was discovered last July 15. Both wells were in the northeast part of the field. Four new locations were made, all offsets and three other operations were in final testing stage.

The newly opened one-mile north extension of the Tokio lenticular producing horizon at Vivian in the north end of the Pine Island field, Caddo Parish, brought three new locations with several others planned. One new well was completed in that area.

Ohio Oil Company is making the final check of securing all possible outstanding leasehold rights from mineral owners in its block for a deep test at Haynesville, Claiborne Parish, in township 23 north, range 8 west, which produces from the Ozan at 2800 feet. The company plans a deep test this year on this block. T. L. James is still getting some leases near Haynesville.

Gulf Refining Company recently took a 60-acre lease in Sections 3- and 4-14n-7w, which indicates it may be renewing its interest in that area of Bienville Parish, which is near Castor and where it drilled a 10,000-foot dry hole last year in Section 25-14n-8w.

Shell Petroleum Corporation continues to renew leases periodically near Logansport, DeSoto Parish, latest renewal being NW SW 1-11n-16w, for five years. The company also leased 80 acres in Section 5-11n-14w, same parish. Magnolia Petroleum Company is reported negotiating with Pickering Lumber Company for a geophysical option on its holdings in the southern part of Sabine Parish near the Angelina-Caldwell Flexure. On the east flank of the shallow Bellevue field, Bossier Parish, H. G. Helms is securing some acreage in township 19 north, range 10 west.

J. O. Whittington's Grayson 1, Section 30-19n-15w, Caddo Parish wildcat recently shut down at 6042 feet, was reported showing some gas when the gate valve was opened to relieve the pressure. Reports have been current that a major company planned to take over the operation and test a gas showing in basal Glen Rose lime. Last casing set in the hole was 9⅝-inch at 2188 feet.

North Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo Parish (Vivian)—		
Tippett Oil Co., Stallcup 3, 34-22n-16w	240	2468
Caddo Parish (Shreveport)—		
Leon Dunn, Nelson 1, 26-18n-14w	504	5562
W. C. Feazel, Hunter 1, 23-18n-14w	240	5560
Webster Parish (Cotton Valley)—		
Hunt Oil Co., Davis 11, 14-21n-10w	150	5952

* Failures; † Junked; ¶ Million cu. ft. gas.

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Arkansas Fields

Will drill shallow test in Clark County

El Dorado, Ark.—Location for a shallow test which will go to 2500 feet or to the Paleozoic was made last week in Clark County, by Joe B. Zick, trustee, of Shreveport, for A. P. Greene 1, NE SE SE 21-8s-18w, on a block of 10,000 acres.

The Magnolia (Kerr-Lynn) field, Columbia County, added its sixteenth Permian lime oil well last week and buying of outside acreage in that area con-

Arkansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Columbia County (Magnolia-Kerrlynn)—		
Vaughn & Hunt, Crisp 1, 23-17-20	720	7564
Little River County (Wildcat)—		
Strahan et al, Dierks 2, 21-12s-28w	*	3797

* Failures; † Junked; ¶ Million cu. ft. gas.

tinues. One mile southeast of production Normandie Oil Company leased 80 acres being east half SE 24-17-20 and one-half mile southwest of production Berkshire Oil Company leased SE SE 22-17-20.

The sixteenth oil well at Magnolia was G. H. Vaughan and H. L. Hunt's A. S. Crisp 1, C SE NW 23-17-20, completed flowing 30 barrels per hour from total depth of 7564 feet. Porous lime was topped at 7442 feet; elevation is 331 feet. One interesting development of this well was the logging of sand with a showing of oil from 5722-5732 feet but only 275 feet of mud appeared when formation tester was run.

J. R. Lockhart's (formerly C. E. Murdock's) Southern Kraft 1, SEc NW NW 17-14s-13w, Calhoun County, Arkansas, wildcat that reported a showing of oil in lime at 4297 feet, was shut down last week at 5095 feet having failed to find anything further; elevation is 171 feet and oolitic lime was topped at 4371 feet.

El Dorado, Ark.—Four drilling permits were authorized last week by the Arkansas Oil and Gas Commission, as follows: Clark County—J. B. Zick, Trustee, A. P. Green 1, located 150 feet south and 75 feet west NEc SE SE 21-8-18; Columbia County—Shell Petroleum Corporation, Levi Garrett 1, located 660 feet south and east C 13-17-20; Miller County—Lyons and Merritt, Matlock 2, located 320 feet south and 350 feet west NEc SE SE 2-20-28; Union County—Sklar Oil Corporation, J. S. Murphy 11, 250 feet east and 150 feet south NWc W½ SW NE 9-16-15.

Mississippi test has dead oil show and is going deeper

Jackson, Miss.—Union Producing Company was reaming down preparatory to coring ahead last week from 4437 feet in J. R. Anderson 1, located 3960 feet west NEc 12-8n-1w, Madison County, near Flora, after the test showed six thribbles of dead brown oil, drilling mud and salt water in a drill-stem test from 4400 to 4437 feet; elevation is 280 feet. Top of the black shale was logged at 3980 feet and top of Cretaceous lime was 4348 feet. The first drill-stem test was dry and first showing of oil occurred in a sand when a core was taken at 4420 feet. Some of this core was lost so the thickness of the sand was not immediately determined.

Union Producing Company, which has a seismograph unit in Sharkey and Humphreys counties, has leased 15,000 acres in township 14 north, range 4 west, Humphreys County, on a 10-year commercial lease basis. In Montgomery County, W. W. Carter of San Antonio, is leasing a block carrying a one-year drilling obligation. Paul D. Torrey and Fred Courson plan a geophysical survey of approximately 75,000 acres of leases they have secured in South Mississippi in Covington, Forrest, Jefferson Davis, Lamar and Marion counties.

Operations will be resumed soon on G. A. Hesse and associates (formerly Big Ridge Oil Company) at Hingin 1, C NE 12-7s-10w, Harrison County, shut down at 2702 feet since November, 1937.

Phillips Petroleum Company's lease on state-owned lands in Mississippi Sound (Gulf of Mexico) from the Mississippi State Mineral Lease Commission, has been delivered and is now to be signed by war department officials at Mobile, Alabama, to whom application must be made for shooting navigable waters. Permit to drill must also be secured from the Mississippi Fish and Oyster Commission at Gulfport, Mississippi.

Cole Creek discovery well to deepen to Sundance sand

Casper, Wyo.—Rotary equipment is being rigged up at General Petroleum Corporation's Government 1, NW NW SE 21-35n-77w, discovery well in the Cole Creek field, which operators plan to drill ahead to test Sundance producing possibilities. Equipment has been moved to this well from the company's State 1 which was abandoned as a failure two weeks ago when it failed to find oil or gas to a depth of 8707 feet. Sundance is expected at around 8500 feet in Government 1.

Mountain States Completions

Company, Well and Location	Init. Prod. Bbls	Depth
COLORADO		
Moffat County (Hiawatha Gas Field)—		
Mountain Fuel Supply Co., Florence Wilson 1 sw sw ne 22-12n-100w	¶5	2606
WYOMING		
Converse County (Shawnee Field)—		
Wyore Oil Co., Mary Gasper 2, cnl nw sw 25-32n-69w	*	750

* Failures; † Junked; ¶ Million cu. ft. gas.

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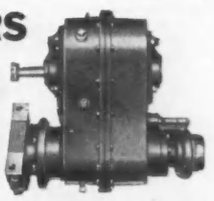

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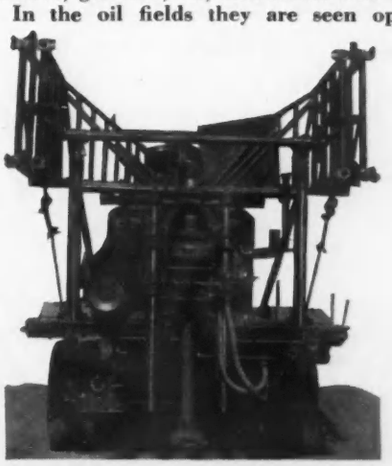

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New Mexico Fields

Lea County drilling activity shows healthy increase

Hobbs, N. M.—New activity in Lea County approached the high mark of the year with the authorization of 14 tests for 5 fields the past week. The Vacuum field accounted for 8 projects, and activity in the new Lovington pool has increased to 5 operations by the addition of two offsets to producing wells.

Owners of leases requiring direct offsets from the 4 flowing wells in the Lovington pool are to proceed with development since a pipe line connection is to be provided by The Texas-New Mexico Pipe Line Company. The latter has surveyed route for an 18-mile north extension from its Monument field system. Maagnolia Petroleum Company increased its operations in the Lovington sector to 3 with the starting of State 1-R, C NW SE 1-17s-36e. United Producers, Inc.'s Caylor 1, near NW NE NW 6-17s-37e, is a south offset to a producer.

Revised proration schedule for April cuts the quota for the state 1000 barrels to 113,700 barrels daily. This includes 4000 barrels allowable designated for export from Eddy County areas and the Maljamar field. The export figure was cut 1000 barrels, but Sinclair Prairie Oil Marketing Company increased its nomination for a like amount. The top well allowable in the above area was boosted from 83 to 91 barrels daily in order to fill the domestic and export nominations, and only 42 wells are capable of making the maximum figure. The allowable for Lea County fields was lowered 1000 barrels, resulting in the top allowable per well being cut 1 barrel to 53 barrels daily.

Fred Turner, Jr. et al's Lea State Bank 1, C SW SW 30-14s-38e, northeastern Lea County wildcat, logged top of Yates at 3171 feet, with an elevation of 3808 feet, and was drilling at 4210 feet.

Shell Oil Company's Harwood 1, Roosevelt County wildcat on the Milnesand structure, was drilling 7640 feet, having logged no shows in the lower section of the Permian.

Drilling & Exploration Company has been assigned two leases, offsetting production, in the Vacuum field by Shell Oil Company, with the latter retaining an overriding royalty. The above company has rigged up to drill State 1-M, C SW SE 29-17s-35e, embracing 160 acres, and State 1-W, NW NW SE 26-17s-35e, being on an 80-acre lease that is offset to the south by a failure. Shell Oil Company has started State 2-N, C SE NE 28-17s-35e, and Continental Oil Company has awarded contract for State 6-H-35, C NE NW 35-17s-34e. Phillips Petroleum Company is attempting to keep abreast of offsets, and authorized the drilling of State-Hale 4, C SE SW 35-17s-34e; State-Hale 5, C NW SE 35-17s-34e; State-Santa Fe 27, C SW NE 34-17s-35e; and State-Santa Fe 29, C SW NW 33-17s-35e.

Phillips Petroleum Company and Pure Oil Company's Woolworth 2, Lease 3, C SE NE 6-25s-37e, northwest portion of the Langlie field, gauged 187 barrels of oil in 6 hours after 390-quart nitro shot at 3420-3525 feet. The well made 66 barrels the first hour and declined to 13 barrels on the sixth hour.

Near the junction of the Langlie and Mattix areas, Repollo Oil Company has started work on State 2-C-157, NE SE SE 32-24s-37e, and Humble Oil & Refining Company's State 1-L will be an indirect north offset. In the Penrose field, Shell Oil Company, Inc.'s T. O. May 1, NW NW NW 35-22s-37e, and Lem Peters et al's Coll 2, c w½ NW SW 26-22s-37e, are offsets to the most southeasterly producer.

New Mexico Completions

Company, Well and Location	Init. Prod. Bbls	Depth
Eddy County—		
Farmer & Talmadge, Hubbell 1, c ne sw 4-18s-25e	†	400
Ingham et al, Page 1, ne ne sw 15-21s-28e	*	2978
Keyes et al, Red Gulch 3, nw nw ne 16-17s-28e	*	2005
Lea County (Langlie)—		
Italo Pet. Corp., Indian 1-B-4, ne nw nw 4-25s-37e	400	3543
Indian 2-B-4, se sw nw 4-25s-37e	300	3514
Phillips-Pure, Woolworth 2, lse 3, c se ne 6-25s-37e	748	3525
Lea County (Lovington)—		
Stanolind, State 2-E, c se nw 1-17s-36e	758	4938
Lea County (Mattix)—		
Phillips-Pure, Woolworth 6, c ne ne 33-24s-37e	1585	3541
Lea County (Vacuum)—		
Magnolia, State 3-J, c se ne 22-17s-34e	470	4720
Phillips, State-Santa Fe 26, c ne sw 29-17s-35e	480	4645

* Failures; † Junked; ¶ Million cu. ft. gas.

Study safety

Employees of nine companies, with more entrants probable, have formed a group at Oklahoma City to study safety work under Jack Hymal, Bureau of Mines safety division. Meetings are being held at Phillips Petroleum Company's community hall in the south field. Fifty-one men registered at the first meeting.

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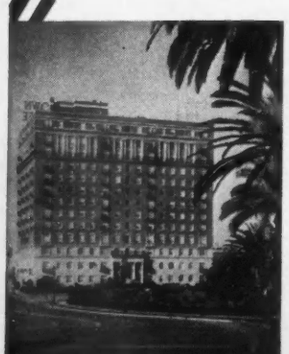

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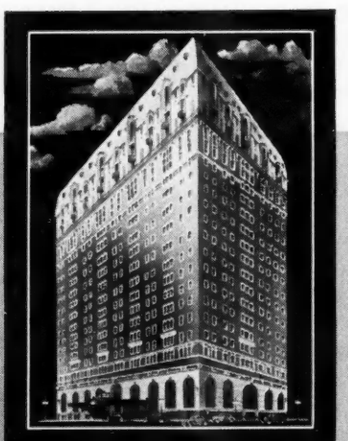

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California Fields

Pacific Western and Getty stake Wasco location.

Wildcat near East Coalinga cores Avenal sand.

Los Angeles.—Pacific Western Oil Company and George F. Getty, Incorporated, have staked location on the Jannsen tract in Wasco field, Kern County, for a test with a reported objective of around 13,200 feet, approximate depth from which previous completions in the area have been produced. Jannsen 1, situated in a 320-acre lease, is a half-mile northwest of Standard Oil Company of California's producing Mushrush 1 and three quarters of a mile northwest of Continental Oil Company's KCL A-4, most recent completion of the field. Getty and Pacific Western will use a 178-foot derrick and a battery of 350-pound boilers.

Wasco has been designated as a "water drive" field by petroleum engineers. There is some question of the life of the field, due to the thinness of the formation.

Continental Oil Company has no plans for the immediate drilling at Wasco, although its plan of development calls for a string of wells for protection purposes.

Significant things are happening along the floor of the San Joaquin Valley, and perhaps the most sensational in months occurred last week in the southwest corner of Fresno County, which has been in the limelight due to the discovery of deep zone production in the Coalinga Nose, or East Coalinga Eocene pool. Amerada Petroleum Corporation's Southern Pacific 7-17, a wildcat in Section 17-19-16, has cored into what is said to be the Avenal sand and is standing cemented with bottom of the hole at 8087 feet. The belief is that enough sand has been logged to make this well a commercial producer. Southern Pacific Railway holds large blocks of land in the district.

There apparently is some question as to whether the Amerada well is an extension of, or a separate structure close to, Coalinga Nose. However, the important angle is that theories of geologists are that the Eocene shore extends northerly, and it is possible that completion of the Amerada well would add extensively to the crude reserves of California.

Many companies will be benefited if the Amerada well is successful. Among the leaseholders are listed: George F. Getty, Incorporated, Pacific Western Oil Company, Union Oil Company, Bankline Oil Company, Standard Oil Company of California, Barnsdall Oil Company, Superior Oil Company, Richfield Oil Corporation, Wilshire Oil Company, The Texas Company, Pure Oil Company, and Bandini Petroleum Company.

The same day that the Amerada Petroleum Corporation's S.P.L. 7-17, an outpost test in the East Coalinga Eocene field found encouraging shows, two excellent producers were brought in, one by the Superior Oil Company and another by Standard Oil Company of California. Superior's Coalinga Fee 4, Section 7-20-16, swabbed in at the rate of 300 barrels daily from 8000 feet and was shut in. Scouts give it a potential of approximately 3000 barrels daily. Standard's No. 71-13C, Section 13-20-15, which bottomed in the Gatchell oil sand at 6945 feet, was brought in for an initial yield of 4000 barrels per day, but due to tremendous gas pressure, was shut in.

In the meantime, Amerada Petroleum Corporation is preparing to make a production test in S.P.L. 7-17, northeast outpost at East Coalinga. Casing has been landed and the hole is standing cemented with 7-inch set at 8022 feet. Amerada controls around 6000 acres in the vicinity of this test.

California Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Los Angeles County (Montebello)—		
Standard, Braun 5	950	7160
Los Angeles County (Wilmington)—		
Burns Oil, No. 1	350	3671
D. D. Dunlap, UP D-3	650	4020
General, Harbor Comm LB 35	1800	4050
PE Comm (LB) 2	960	4120
Signal, Signal-LB-UP (LB) D-1	3590	4120
Signal-LB-UP (LB) D-2	3650	4065
Universal Consolidated, Newport (LB) 9	125	3150
Vulcan Oil, Gilmore 469-1	140	5575
V.R.G. Wilbur, Santa Fe 3	30	3725
Los Angeles County (Torrance)—		
D. W. Elliott, Kettler 9	1080	5175
Kern County (Cole's Levee)—		
Union, KCL 1-11, nec sec 11-31-25	528	9715
Kern County (Mt. Poso)—		
Ring Oil, Shapiro 6, n¼c sec 32-26-28	450	1725
Kern County (Edison)—		
Francis O'Reilly, Edison-Seale 5-26, nwc sec 5-30-29	100	4155
Kern County (Ten Section)—		
Shell, KCL A-81-25, nec sec 25-30-25	2863	8190
Kern County (Kern River)—		
J. L. Milburn, Trust 1, (W) e¼c sec 13-29-28	*	1667
Kern County (Lerdo)—		
Shell, KCL 2A-23-2, nwc sec 2-29-26	*	9657
Kern County (McClung)—		
Superior, KCL 12, nec sec 3-30-26	*	13131
Kern County (Fruitvale)—		
Western Gulf, KCL-Fruitvale 1, nwc sec 14-29-27	*	3900
Fresno County—		
(East Coalinga Eocene Pool)		
Robert S Lytle, No. 22-18F, nw¼ sec 18-20-16	3384	7422
Ventura County (Sespe)—		
Commander Oil, No. 7-F, sec 13-4-19	*	575
San Luis Obispo County (Cholame)—		
Cholame Synd., Jack 2, swc sec 10-25-15	*	3800

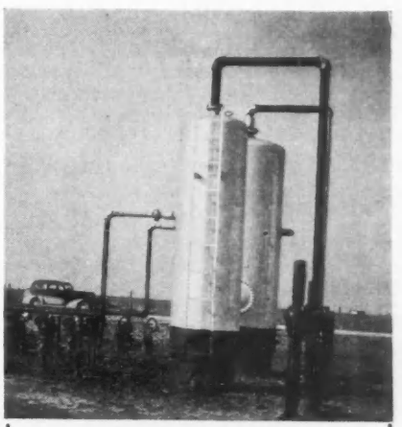
* Failures; † Junked; ¶ Million cu. ft. gas.

San Joaquin deep drilling encouraged by Wasco test

Los Angeles.—With the celebration this week of the end of the first year of producing life of Continental Oil Company's KCL A-2, discovery well of Wasco field which established a record in drilling to 15,004 feet, indications are the continued steady flow of oil from the well soon will amortize the $800,000 invested in leases, preliminary geology and drilling.

The consistent performance of this well, plugged back to 13,175 feet, has exerted a heavy influence on deeper prospecting in San Joaquin Valley. Confirmation of the economic value of the 3000-barrel strike represented by KCL A-2 with recent completion of the company's KCL A-4 at 13,200 feet for 9200 barrels has served to emphasize the importance of the valley floor as a potential crude reserve. Discovery of East Coalinga Eocene field in Fresno County and other spots near Bakersfield within the past year may be attributed partially to the inducement to deeper drilling afforded by the two Continental Oil Company wells, it is said.

Another development which may be partly the outgrowth of the influence of the deep Wasco wells is the cur-



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rently drilling Moodie 1 of Superior Oil Company in Rio Bravo field, a deep test with a rumored objective of 16,000 feet. It is said the rig being used is such as to permit making as much as 1000 feet of hole per day when drilling between 8000 and 10,000 feet. The hook-up employs 500-pound boilers, a 200-ot derrick and what are reputed to be the heaviest draw works and mud pumps ever seen on the Pacific Coast.

Seek 10-acre spacing for White Creek field

Operators from the White Creek field, Live Oak and McMullen counties, requested ten-acre spacing at a hearing before the Texas Railroad Commission last week. E. C. Rach, petroleum engineer for Edwin M. Jones, said that owners of 80 percent of the probable area of the field joined in the program. There were no protests.

Under the plan he submitted, proration would be on straight acreage. Production consists of 21 gravity oil produced from seven feet of sand found at 1490 feet.

Stribling spacing

One well to 20 acres for the Stribling field, Stephens County, is provided in an order issued by the Texas Railroad Commission last week. Wells may be spaced 330 feet from lease lines and 660 feet apart.

Allowables will be based on acreage and per well with 50 percent allocated on each factor. A maximum of 30 acres may be assigned to one well for proration.

The rules provide for 100 feet of surface casing cemented to the surface and an oil string set with 125 sacks of cement. A maximum gas/oil ratio allowance of 2000/1 is included with a total displacement factor for high gas/oil ratio wells.

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Michigan Fields

Wild Kent County gas well brought under control

Mt. Pleasant, Mich.—Michigan's wildest gas-water well of record was finally brought under partial control April 1 after blowing out 20 days previously with a 10-12 million cubic foot flow of Berea sand gas at 1070 feet. This blowout combined with two other less difficult blowouts, has resulted in promulgating special casing and cementing rules for the Walker pool, Kent County.

The wild well was drilled by Crown Development Company, Johnson 1, Section 5-6n-12w, Kent County. Fifty-three feet of 10-inch drive was set in the drift and 360 feet of 8¼-inch through the Marshall water zone, uncemented. Drilling was continued ahead, with the 1900-foot Traverse lime zone as the objective. At 1070 feet it encountered an estimated 10 to 12 million feet of gas in the Berea grit. Shut in on the 8-inch, pressure rocked up to 581 pounds, with 96 feet of the casing lifted out of the hole. When casing lifted, it let Marshall water back in the hole, and later attempts to re-run casing proved futile. On April 1 flow of gas-water from inside of the 8-inch was checked and it is believed it will be possible to re-run pipe to the Berea. However, the well has started to crater and may still give trouble.

F. R. Frye, state conservation engineer, said special orders had been issued which will require operators in the area to cement 8-inch through the Marshall zone, 500 feet or less, and cement 6-inch through the Berea, when oil or gas is encountered, with 5-inch cemented on Traverse, 1800 feet. If the operator wishes to complete a test in the Berea for gas, a 6- or 5-inch casing string must be cemented on top of the Berea sand.

The drilling play in Columbia-Bloomingdale Townships, Van Buren County, should show another spurt with T. F. Caldwell, Inc.'s Leahy 1, SE NW NW 18-1s-14w, initialed 425 barrels after acid at 1215 feet from Traverse lime. Caldwell's test is ¾ of a mile southwest of production, 1 mile northeast of production, and 1½ miles southeast of production. Operators were puzzled as to whether the well opens a new pool or if it connects with one of the three others—and if so which one.

Gulf Refining Company continued to drill out Sylvania lime-sand on the Bateson 1, Section 2-14n-4e, Bay County, at 4337 feet this week, deepest active drilling wildcat in Michigan. The well has shown commercial oil in the Monroe and saturation in Upper Sylvania.

J. V. Wicklund Development Company is junking Segerlund 1, Section 5-15n-1w, Jerome Township, Midland County, at 4001 feet after deepening from an oil show at 3765 feet in Dundee lime. Seven wildcat tests were junked during the week. One of these, Schelling & Allens' Drake 1, Section 11-1n-8w, Barrry County, was the first of a current 12-well wildcat campaign being carried on in Barry County. The county is not producing oil or gas at the present time but has been brought into the play due to 1938-39 discoveries in Allegan, adjacent on the west, and Kent County, adjacent to the north.

Freeman Oil Company was drilling ahead of 700 feet this week with rotary on Schut 1 wildcat, Section 4-21n-8w, Missaukee County, after losing the first hole at 960 feet when drill pipe froze.

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
Dewey Batjes, Speet 1, ne ne se 2-4n-16w	*	1590
American Dr. Co., Lovett 1, se nw ne 31-1n-12w	*	1675
Socony Vacuum, Bredwig 2, ne se sw 15-4n-13w	*	1562
Petroleum Enterprises, Byers 1, ne nw ne 22-4n-13w	225	1560
W. F. Wicher, Waterman 1, sw se se 30-1n-13w	*	1355
Arenac County—		
Sterling Dr. Co., Marsh 1, se nw ne 26-19n-3e	85	2959
Weber Oil Co., Dodge 3, se se sw 4-20n-4e	130	2533
Barry County—		
Schelling-Allen, Drake 1 nw sw ne 11-1n-8w	*	1990
Clare County—		
Pure, Bicknell B-5, c s sw se 28-19n-6w	2000	3900
State A-2, c n nw nw 33-19n-6w	800	3889
Clinton County—		
C. P. McDonald, Koeppen 1, c e se se 19-6n-3w	*	2961
Isabella County—		
Citie Service, McDonald 1, nw nw nw 21-16n-3w	18	3695
Kent County—		
Gordon Oil Co., Gavin 1, ne nw nw 5-6n-12w	75	1879
Lapeer County—		
Smith Pet. Co., Liquidation Corp. 1, nw nw nw 27-9n-9e	*	1507
Midland County—		
J. V. Wicklund, Segerlund 1, c e se se 6-15n-1w	*	4001
Montcalm County—		
Great Lakes, Porter 1, c ne 17-11n-7w	*	1270
Ogemaw County—		
Weber Oil Co., State 1, nw nw sw 23-24n-1e	*	2990
St. Clair County—		
Lee Brown, Pontine 1, nw nw nw 8-7n-17e	*	793
Van Buren County—		
Fisher & McCall, Melvin 4, se se sw 8-1s-14w	800	1204
Clark & Johnson, Wiggins 3, nw sw sw 9-1s-14w	400	1249
Will Shoemaker, Sage 4, ne se ne 14-1s-14w	*	1354
Wiser Oil Co., Boyer 9, ne ne nw 17-1s-14w	415	1217
T. F. Caldwell, Lehay 1, se nw nw 18-1s-14w	425	1215
DeVries-Boeves, Fry 1, ne se sw 21-1s-15w	*	1206
Clapsaddle et al, Been 2, ne ne nw 24-1s-15w	225	1193
DeRocher 1, ne nw ne 24-1s-15w	190	1196

* Failures; † Junked; ¶ Million cu. ft. gas.

First Showing of Oil Pictures at Houston Oil Show

The world's premier of a new motion picture that is now being completed by the United States Bureau of Mines will be given at the Oil-World Exposition, Houston, April 24 to 29, inclusive. This picture, entitled "The Evolution of the Oil Industry," takes in the drilling of the Drake well and shows the advancement of the industry from that time up to the present. The showing will be in the Music Hall of the Coliseum and will be scheduled daily during the week of the show.

In addition to this picture, two more Bureau of Mines movies that have just been revised and brought up to date will be given their first showing. These are "The Story of Gasoline" and "The Story of Lubricating Oil."

Other moving pictures, reels for which will be supplied by exhibitors to show the field application of equipment, will be given continuously in a room adjacent to the exhibits.

WILDCAT REPORT
New Starts and Completions

STATE	WILDCATS STARTED		WILDCAT TESTS COMPLETED							
			Total		Oil		Gas		Dry	
	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year
Alabama	...	1	...	1	...	...	...	...	...	...
Arkansas	1	9	1	6	...	...	...	...	1	6
California	2	72	6	36	...	8	...	...	6	28
Colorado	...	...	...	1	...	...	...	...	...	1
Georgia	...	1	...	...	...	...	...	...	...	...
Illinois	3	107	6	65	1	5	...	...	5	60
Indiana	...	8	...	1	...	...	...	...	...	1
Kansas	3	49	7	44	2	15	...	...	5	29
Kentucky	...	5	...	4	...	3	...	...	...	1
Louisiana	9	39	1	24	...	5	...	...	1	19
North Louisiana	2	13	...	8	...	2	...	...	...	6
South Louisiana	7	26	1	16	...	3	...	...	1	13
Michigan	4	51	7	79	...	7	...	...	7	72
Mississippi	2	...	...	...	...	...	...	...	...	...
Missouri	...	1	...	...	...	...	...	...	...	...
Montana	...	1	...	...	...	...	...	...	...	...
New Mexico	2	10	...	5	...	2	...	...	...	3
New York	...	...	...	2	...	...	...	1	...	1
Oklahoma	3	49	4	44	...	7	...	2	4	
Ohio	...	2	1	5	...	1	...	...	1	4
Pennsylvania	...	...	1	...	...	...	...	...	1	1
South Dakota	...	1	...	...	...	...	...	...	...	...
Texas	28	251	15	266	1	28	...	2	14	236
East Texas	5	36	2	21	...	...	...	...	2	21
North Texas	4	30	4	64	...	15	...	1	4	48
Gulf Coast	1	28	1	21	...	2	...	...	1	19
Panhandle	...	2	...	1	...	...	...	...	...	1
South Texas	11	97	5	113	...	7	...	...	5	106
West Texas	7	58	3	46	1	4	...	1	2	41
Wyoming	...	3	...	1	...	...	...	...	...	1
Total U. S.	57	662	48	578	4	82	...	5	44	491

ARKANSAS

FIRST REPORTS

Clark County—J. B. Zick, Trustee's A. P. Greene 1, 150 ft s and 75 ft w nec se se 21-8-18.

COMPLETIONS

Little River County—J. G. Strahan et al's Dierks Lbr. Co. 2, sw se 21-12s-28w, abnd 3797 ft.

CALIFORNIA

FIRST REPORTS

Imperial County — Max Cawthon's Section 2-1, 600 ft n and 600 ft w sec sec 2-11s-13e, lcn (Carbon dioxide well).

Ventura County—Nevada-Fortuna Oil Co.'s Hadley 1, sec 13-4-19, grading roads.

COMPLETIONS

Kern County—J. L. Milburn's Trust 1, 330 ft n 990 ft w e¼c sec 13-29-28, abnd 1667 ft, in shale, top Santa Margarita 1375 ft. Shell's KCL 2A-23-2, 1656 ft s 990 ft e nwc sec 2-29-26, abnd gray sand 9657 ft, top barren Vedder 9557 ft. Superior's KCL 12, 990 ft s 330 ft w nec 3-30-26, abnd 13,131 ft, top Vedder 11,120 ft, top Avenal 12,825 ft. Western Gulf's KCL-Fruitvale 1, 430 ft s, 330 ft e nwc sec 14-29-27, abnd sandy shale 3900 ft, top Fairhaven zone 2870 ft, top Santa Margarita 3766 ft.

Ventura County—Commander Oil's No. 7-F, sec 13-4-19, abnd as J. A. English Lankershim 1, 575 ft.

San Luis Obispo County—Cholame Syndicate's Jack 2, 100 ft n, 200 ft e swc sec 10-25-15, elev 1850 ft, swabbed dry 3800 ft.

ILLINOIS

FIRST REPORTS

Clark County—Kingwood Oil Co.'s Jacob Miller 1, se ne ne 36-7n-12w, loc.

Effingham County—Kingwood Oil Co.'s McWhorter 1, c e½ se nw 15-6n-6e, to re-enter old hole at 5823 ft and deepen to St. Peter at about 6200 ft, rigging rotary.

Wayne County — New Penn Development Co.'s J. E. Baker 1, 21-2s-9e, moving in materials. Bartlett and Crum's Stansfield 1, ne ne 30-2s-13w, rigging up.

COMPLETIONS

Clay County—Burnett et al's Smith 1, ne nw se 21-5n-5e, Larkinsburg tnp., top Aux Vases 2405 ft, abnd 2540 ft.

Edwards County—Roach, Voyles and Merrill's A. Lee 1, sw ne se 11-1s-10e, Albion tnp, top McClosky 3352 ft, abnd 4101 ft.

Effingham County—Whisenant et al's Betram 1, sw nw nw 23-8w-6e, Teutopolis tnp, top Fredonia 2460 ft, abnd 2511 ft.

Fayette County—Liggett & Davis' School 1, nw nw nw 34-8n-3e, Louden tnp, abnd 1200 ft.

Shelby County—J. A. Ayleward and Elmer Corn's Wabash Right-of-way 1, c n½ n½ 27-10n-5e, Prairie tnp., top Benoist 1937 ft, swabbed and pumped 100 bbls 16 hrs, td 1947 ft.

Wabash County—Tide Water Associated Oil Co.'s Cowling 1, sw sw se 18-2n-12w, Wabash tnp, top McClosky 2816 ft, abnd 2830 ft.

KANSAS

FIRST REPORTS

Barton County—Transwestern Oil Co.'s Ney 1, swc se 8-16-11w, dr. Shaffer's Hitchman 1, swc ne 29-16-12w, lcn.

Rice County—Phillips Petroleum Co.'s Newbold 1, sec ne 2-19-9w, lcn.

COMPLETIONS

Barton County—Gulf Oil Corp.'s Louis 1, c n½ nw sw 2-20-12w, 2 mi nw W. Ellinwood pool, top anhydrite 600 ft, top Arbuckle 3447 ft, shot with 80 quarts, 3363-75 ft, acidized 600 gals, td 3414 ft, 125 ft oil in hole, no increase, abnd.

Barber County—Olson Oil Co.'s Coffman 1, c nw ne 25-31-12w, top Lansing-Kansas City 3680 ft, top Chat 4241 ft, top Viola 4512 ft, top Simpson sd 4600 ft, top Simpson Dolomite 4700 ft, top Arbuckle 4800 ft, sg in Viola, abnd 4850 ft.

Butler County—Hall et al's Ferrell Ranch 1, sw nw ne 28-28-8e, 4½ mi e Brewer pool, top Mississippi 2635 ft, so 2646 ft, pay 2685-89½ ft, acidized 2000 gals, 35 bbls 42 gr completed. Bowland & McCoy's Frankson 1, sec sw 2-29-6e, 1 mi e Snowden-McSweeney pool, abnd 165 ft.

McPherson County—Marylyn Oil Co.'s Dixon 1, nw ne nw 7-19-2w, 1 mi n Chindberg pool, top Kansas City 2340 ft, top Chat 3000 ft, 1st oil 3010-11 ft, td 3019½ ft, acidized 500 gals, td 3019½ ft, 10 bbls, completed. Sinclair Prairie et al's Martens 1, c sl sw 20-21-3w, 1 mi w S. Voshell pool, top Lansing 2485 ft, top Mississippi 3255 ft, top Viola 3795 ft, top Simpson 3820 ft, top Wilcox 3826 ft, top Arbuckle 3893 ft, abnd 3910 ft.

Stafford County — Virginia Drilling Co.'s Scholcktermeyer 1, sec nw 7-21-11w, 2½ mi w Snider pool, top Anhydrite 575 ft, top Topeka 2765 ft, top Lansing 3175 ft, top Conglomerate 3415 ft, top Simpson 3420 ft, top Arbuckle 3457 ft, td 3580 ft, small amount of oil, abnd.

NORTH LOUISIANA

FIRST REPORTS

La Salle Parish—G. W. Zeigen's La. Cent. Lbr. Co. 16, 1076 ft n and 2010 ft e swc 24-11n-2e, moving in materials.

Natchitoches Parish—N. W. DeSoto et al's Blackshear 1, ne nw 27-10n-9w, lcn.

SOUTH LOUISIANA

FIRST REPORTS

Acadia Parish—T. G. Markley's Vincent 1, Trilby prospect, 2981 ft n and 1676 ft w of sec of sec 19-7s-1w, mim.

Evangeline Parish—Continental's Manuel 1, Reddell prospect, 1500 ft e of center of sec 32, in section ne part of sec 33-4s-1w, lcn.

Lafourche Parish—J. P. Scranton's Martinez 2, Lafourche Crossing prospect, 340 ft e and 360 ft s of nwc sec 132-15s-17e, lcn.

Terrebonne Parish—Shell's Ells 1, Amelia prospect, 467 ft n, 127 ft w of sec sec 66-16s-14e, lcn.

Jefferson Davis Parish—Robert M. Bleakie's Lock Moore 1, Lock Moore prospect, 300 ft n and 300 ft e of center of sec 29-7s-6w, lcn.

Vermilion Parish—Louisiana Land & Exploration Co.'s Louisiana Fur Co. 1, White Lake area, 3200 ft e and 225 ft s of sec of sec 16-15s-1e, in sec 22-15s-1e, lcn.

Vermilion Parish—Eberhart & Son's Saunier 1, Erath area, 3630 ft ne of swc and 660 ft n of se line of sec 54-13s-5e, lcn.

COMPLETIONS

Cameron Parish—Superior's J. Sells 2, 1200 ft n and 500 ft e of swc of sec 4-15s-8w, abnd 6880 ft.

MISSISSIPPI

FIRST REPORTS

Kemper County—M. R. Crabb's W. T. Caldwell 1, nw se 25-9n-15w (1 mi n Lauderdale County line), derrick.

Prentiss County—Home Dev. Co.'s A. Allen 1, located 750 ft s and 1685 ft e nwc se 8-7s-9e, dr 595 ft.

MICHIGAN

FIRST REPORTS

Arenac County — Strange Oil Co.'s Piotrowski 1, nw nw nw 29-19n-5e, rig.

Barry County — American Drilling Co.'s Brown 1, nw nw nw 23-2n-10w, dr.

Kalamazoo County—W. J. Cline's Munson 1, nw ne nw 35-3s-12w, rig.

Van Buren County—Mathews & Hosiers' Quackenbush 1, ne nw ne 3-2s-15w, dr.

COMPLETIONS

Allegan County—Dewey Batje's Speet 1, ne ne se 2-4n-16w, Laketown twp., Traverse top 1448 ft, water 1449 ft, abnd 1590 ft.

Barry County—Schelling & Allens' Drake 1, nw sw ne 11-1n-8w, Traverse top 1907 ft, water 1953 ft, abnd 1990 ft.

Clinton County—C. P. McDonald's Koeppen 1, c e se se 19-6n-3w, abnd 2961 ft.

Lapeer County—Smith Pet. Co.'s Liquidation Corp. 1, nw nw nw 27-9n-9e, abnd 1507 ft.

Midland County—J. V. Wicklund Dev. Co.'s Segerlund 1, c e se se 5-15n-1w, Dundee 3675 ft, so 3765 ft, abnd 4001 ft.

Montcalm County—Great Lakes Gas Co.'s Porter 1, c ne 17-11n-7w, Stray sand, abnd 1270 ft.

St. Clair County—Lee Brown's Pontine 1, nw nw nw 8-7n-17e, Dundee 653 ft, so 710 ft, shot, abnd 793 ft.

NEW MEXICO

FIRST REPORTS

Chaves County—Comanche Drl. Co.'s Campbell 1, ne ne nw 15-11s-26e, lcn.

Union County—El Paso Nat'l Gas Co. (was Quaker State Oil Co.'s) Zurich 1, 990 ft fr s and 660 ft fr w lines 2-21n-34e, co to dd from 2617 ft.

OKLAHOMA

FIRST REPORTS

Hughes County—Continental Oil Co.'s Hudson 1, sec 8-4n-9e, lcn.

Pottawatomie County—Nels-Burton et al's Boggs 1, nec se 16-9n-2e, pits.

Tillman County—Ray's Madison 1, nwc sw 11-2s-16w, dr 1860 ft.

COMPLETIONS

Carter County—Carter's Vensonite 1, nw nw ne se 34-1s-2e, 3½ mi e S. Tatum pool, top Simpson 655 ft, top McLish 1805 ft, abnd 2505 ft.

Pottawatomie County—Johnson & Kimmitz's Billington 1, nwc se 5-7n-5e, Seminole District, top Calvin 2930 ft, top Senora 3030 ft, top Earlsboro 3270 ft, top Mays 3780 ft, top Woodford 3830 ft, top Sylvan 4015 ft, top Viola 4115 ft, top Dense 4160 ft, top Dolomite 4210 ft, abnd 4303 ft.

Seminole County—Burke-Greis' Harjoche 1,

PAST

30 years ago, Darling made history with the original composition valve cups—Darcova.

PRESENT

Darcova, Darval and Darflex Valve Cups are the finest you can buy today.

FUTURE

No matter how tough the service, you can depend on our Valve Cups for economical operation, year after year!

DARCOVA (Orange Label), the standard for over thirty years under severe service at all depths.

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(Blue Label) for service in wells to approximately 2,000 feet in depth.

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(Green Label) the popular favorite for wells to 800 feet in depth.

Manufactured Only By

DARLING VALVE & MFG. CO.

Williamsport, Pa.

nec sw 19-8n-7e, 1 mi ne E. Little River pool, top Woodford 3955 ft, top Sylvan 4072 ft, top Viola 4165 ft, top Mays 3860 ft, top Dense 4206 ft, top Dolomite 4214 ft, top Wilcox 4271 ft, abnd 4295 ft.

Tillman County—Smith's Hamel 2, ne nw nw 6-5s-15w, 9 mi w Red River Bed pool, abnd 2829 ft.

OHIO

COMPLETIONS

Huron County—Boston & Cosgrove's C. L. Kramer 1, Lot 2, Section 3, Hartland tnp., no Clinton sand, abnd 2026 ft.

PENNSYLVANIA

COMPLETIONS

McKean County—Penn Bradford Oil Co.'s Warrant 5574, Hamilton tnp., top Oriskany 4138 ft, abnd 4145 ft.

EAST TEXAS

FIRST REPORTS

Hill County—C. E. Sykes & Brannon's J. G. Weatherby 1, 486 ft fr n and 1042 ft fr w lines of W. O. Merriwether sur, 4 mi se Hillsboro, lcn for deep test.

Houston County—G. C. Dixon et al's W. Goodman 1, 330 ft out of swc of 90-acre tract, or 2700 ft fr w and 2530 ft fr s of J. J. Thomas sur, ¾ mi e Lovelady, lcn.

McLennan County—J. Morgan Russell et al's J. D. Lovelace 1, 1667 ft fr sw and 556 ft fr nw lines of P. J. Menard sur, 5 mi sw Waco, top Georgetown 60 ft, dr 390 ft.

Nacogdoches County—D. McDaniels et al's G. Muckelroy 1, 380 ft fr n and 1640 ft fr w of 500 acres out of n½ 1024.7-acre tr, J. A. Cherino sur, 2 mi se of Cherino, show o&g, cem 4½-in cas 628 ft.

Robertson County—J. E. Cox, Tr., et al's Sandifer 1, 5150 ft fr ne and 100 ft fr nw lines of H. Henry sur, 3½ mi se Franklin, lcn.

COMPLETIONS

Cherokee County—C. C. Lanier et al's A. T. O'Neal 1, 150 ft out of nec of 131.6-acre lease, J. M. Procella sur, 3½ mi e Troup, elev 436 ft, base Pecan chalk 3073 ft, base Austin chalk 3777 ft, top Woodbine sand 3850 ft, top water sand 3855-3912 ft, abnd.

Upshur County—R. E. L. Johnson et al's Liz Parker 1, 330 ft out of sec of 56-acre tract, John B. Goy sur, 7 mi w Coffeyville, elev 408 ft, Pecan chalk 2640-3060 ft, top Blossom 3415 ft, top Austin chalk 3754 ft, abnd 4004 ft.

NORTH TEXAS

FIRST REPORTS

Archer County—Bridwell Oil Co.'s A. Wolf 1, 1650 ft fr n and 482 ft fr w lines sec 82, blk 4, Clark-Plumb sub-div, lcn for 1150-ft test.

Montague County — W. M. Frank et al's Cochran Bros. 1, 150 ft fr s and 450 ft fr w lines of north 54-acre of tract, Walter Harvey sur A-329, 3 mi nw Ringgold, lcn for 2000-ft test.

COMPLETIONS

Archer County—Bridwell Oil Co.'s Frank Schroeder 1, 200 ft fr s and 600 ft fr e lines sec 56, blk 4, Clark-Plumb sur, abnd in shale 1875 ft. Shell Pet. Corp.'s J. J. Perkins 1, 220 ft out of nec blk 47, Bell County School Lands, trace oil 1413-16 ft, abnd 1474 ft.

Cooke County—Townsley-Petro et al's Kate Fleitman 1, 150 ft fr n and 750 ft fr e lines of R. E. Key sur A-357, abnd 1750 ft.

Jack County—C. A. Everts et al's J. H. Vick 1, 330 ft fr s and 1630 ft fr e lines of T. J. Crow sur A-2258, top Palo Pinto lime 873 ft, abnd 2850 ft.

Young County—Dean Bros.-Murray & Griffey's J. C. Vaughn 1, 440 ft fr s and 570 ft fr e lines of B. Russell sur A-1384, used acid and shot with nitro, abnd 4340 ft.

TEXAS GULF COAST

FIRST REPORTS

Harris County—J. H. Woodward et al's Miller Estate 1, nw o,f Aldine, 1250 ft s of n line and 550 ft e of w line of 285-acre tract, J. Skorupski sur, mim.

COMPLETIONS

Montgomery County—Pennington & Cartwright's Banker Estate 1, sw of Conroe, 398 ft s n line and 478 ft e w line of 110-acre tract, L. M. H. Washington sur, abnd 1033 ft.

SOUTH TEXAS

FIRST REPORTS

Atascosa County—G. D. Gurley and R. E. Phalon, Krisch 1, 750 ft nw line, 480 ft sw line of sec 1207, J. C. Dierks sur, lcn.

Bee County—Dirks Brothers' Page 1, 2400 ft nw line, 1701 ft sw line, Thomas K. Pilkington sur, rigging up.

Bexar County—Fielding B. Dickson, Dickson 1, 1050 ft nw line (highway), 150 ft ne line of 165-ac lse, F. Villareal sur, spud and shut down, waiting on casing.

Duval County—H. H. Howell's Parr 1, 330 ft s line, 330 ft w line, blk 83, subd of the Parr Ranch, Andres Garcia Heirs "San Andres" grant, spudded.

Jim Wells County—H. H. Howell's Campbell 1, 330 ft n line, 330 ft e line of 60-ac tr, share 4, Lavaca gr, spudded.

Karnes County—Herbert Aid's Kaiser 1, 330 ft sw line, 990 ft se line 112-ac lse, J. Poitevent sur, lcn.

Medina County—Maco Stewart and Son's Davis 1, 960 ft s line, and 2100 ft e line, 404-ac lse, L. A. Patillo sur 121, rigging up.

Nueces County—O. W. Killam's Smith 1, 330 ft s line and 330 ft e line of sec 30, Laureles Farm Tract subd, Ramon de Ynojosa gr, prep to spud.

Starr County—R. C. Hillman's Gonzales Heirs 1, 282 ft n line, and 386 ft e line of sh 232, por 69, dr below 250 ft.

Webb County—W. Earl Rowe and R. F. Scheig's Kelsey and Caulk 1, 330 ft n line and 330 ft e line of sec 64, CCSD and RGNG sur, spudded.

Williamson County—M. Aldridge's Sloan 1, 350 ft s line, 400 ft w line of 100-ac tr, W. J. Baker sur, tentative lcn.

COMPLETIONS

Duval County — H. R. Cullen and John Mayo's Hoffman 1, 8800 ft s and 466 ft e of nw cor of lse out of 3728-ac tr., Jose Rafael Gravia Salinas "San Leandro" gr, abnd 6135 ft.

Jim Hogg County—A. W. Dillard's Ramirez et al 1, 330 ft n line, 330 ft e line of 513.9-ac tr, sh 5, Lassater Partition, John S. Williams sur 271, abnd 3011 ft.

Lee County—Fred Pederson's Brown et al 1, 450 ft s line, midway e and w lines of 201-ac tr in D. Hudson sur, 447 ft derrick floor; top Taylor, 3956 ft; top Austin chalk, 5213 ft; top Eagleford, 5970 ft; top Georgetown, 6070 ft; top Edwards, 6394 ft; sand with oil show, 5165-85 ft; sand with oil show, 6396-6404 ft; pumped 100 barrels fluid, 4 percent oil and rest salt water; total depth 6424 ft.

Milam County—Alex Krause' Graves 1, 150 ft n line, 800 ft e line of 112.25-ac lse, Jackson Hall sur, abnd 910 ft.

Webb County—Brazos-Young Corp.'s Bruni 1, begin at nw cor of sur 735; thence n 35 degrees, 35 minutes, w 930 ft; thence s 54 degrees, 30 minutes w, 330 ft to lcn in J. V. Borrego gr, abnd 4305 ft.

WEST TEXAS

FIRST REPORTS

Crane County—P. S. Christian et al's M. F. Stephenson 1, 330 ft fr n and 1050 ft fr e lines of south 160 acres of n½ sec 40, Cert. 2044, W. A. Bates sur, Crane townsite, lcn.

Ector County—O. S. Black and Bob Steele's J. L. Johnson-I.T.I.O. 1, 330 ft out of swc sw T&P sec 34, blk 43, T-1-S, mim.

Tom Green County—R. P. Lynn & Ralph Cobb's X. B. Cox 1, 1000 ft fr w and 3842 ft fr s lines of Valentine Mueller sur No. 176, machine. Roush & Stuard's Pugh 1, 150 ft fr w and 750 ft fr n lines of 100-ac lse, sec 73, James Eldridge sur, 1 mi e Christoval, lcn.

Jones County—Humble's John Sears 1, 582 ft fr n and 330 ft fr w lines T&P sec 36, blk 18, mim. A. H. Tarver et al's A. S. Barkley 1, 330 ft out of swc se sec 54, Asylum Lands 4½ mi ne Anson, lcn.

Pecos County—Magnolia Pet. Co.'s H. J. Eaton-Abell 1, 440 ft out of e cor H&TC sec 23, blk 3, 3½ mi sw Imperial, rur for 6000-ft test.

COMPLETIONS

Jones County — Jones-Stasney-Groover & Rose's Ida Crow 1, 440 ft out of sec sec 9, Asylum Lands, top Palo Pinto lime 3386 ft, hfw and abnd 3390-3400 ft.

Pecos County—C. W. Williams et al's T. P. Land Trust-Humble 1, sw sw ne T&P sec 95, blk 3, elev 3298 ft, abnd 355 ft.

Reeves County—Far-West Oil Co. (was Lagoki Oil Co.'s) Richards-Shaw 1, 660 ft fr n and 1320 ft fr w lines PSL sec 16, blk 59, jkd 1581 ft, skid 40 ft e, elev 3127 ft, upper Castile pay 1618-30 ft, flows 16 bbls 30.5 gravity oil initial.

WEST CENTRAL TEXAS

FIRST REPORTS

Callahan County—Dobbs Oil Co.'s Finley 1-a, sec 75, Blind Orphan Asylum Lands, rig.

McCulloch County—J. E. Ellis et al's J. W. Black 1, 150 ft out of nec H&TC sec 290, lcn for 350-ft test.

Indian lease sale

Tulsa.—Leases on 68 tracts of land owned by Four Civilized Tribes will be sold at auction at Anadarko April 20 by the superintendent of the Kiowa agency. Counties comprising this offering of 8399 acres include Comanche, Caddo, Kiowa, and Cotton. Caddo County leads with 37 tracts, followed by Comanche with 21, Kiowa 9 and Cotton 1.

NOTES FOR THE Equipment Buyer and User

Arc Welder

WILSON WELDER AND METALS COMPANY

Wilson Welder and Metals Company, Inc., New York, announces a new arc welder of 100-ampere rating at 30 volts for light sheet-metal welding and other light work requiring low current and fine control. The new machine is of the alternating current, transformer type, and designed especially for use with heavily coated electrodes. Standard wiring is for single phase, 220-volt, 60-cycle power supply, but it can be furnished for 440-volt supply if desired. Open circuit voltage is 65 volts.

Wilson 100-Ampere Arc Welder

A calibrated scale on the front of this welder indicates the adjustment throughout the range of the machine, which is from 25 to 150 amperes. This adjustment is made continuously by rotating a crank at the top, and because the circuit is not broken there is no need to stop operations and open any connections while a change is being made. The continuous nature of the adjustment makes it possible to tune the current exactly to suit the thickness and welding characteristics of the material being welded and of the electrode used.

Alternating-current welders of this size have been found to give the best performance when electrodes made especially for A.C. welding are used. Therefore the company recommends Wilson No. 520 with this model. It will accommodate diameters up to 5/32-inch.

Enclosed in a sheet metal housing 16½ inches in diameter and 24 inches high, weighing 145 pounds, the new welder is a compact and mobile unit. The whole construction has been designed to the complete safety and durability required in production welding departments. The welder meets the requirements of the latest standards of the Underwriters' Laboratories, Inc.

Duplex Welding Hose

THE MANHATTAN RUBBER MANUFACTURING DIVISION

Condor Duplex Welding Hose, a development of The Manhattan Rubber Manufacturing Division, Passaic, N. J., is a highly practical twin hose designed to make welding safer and more efficient.

In the construction of Condor Duplex, two hose lines are held together by a permanent web joint, integrally molded and having great strength and flexibility. The joint prevents tangling, kinking and snagging while the hose is in use. The ends are separated 18 inches from the torch end and 24 inches from the tank end for ease in making connections and in handling.

Condor Duplex Hose may be obtained in either one or two braid, or in heavy-duty braid and spiral cord construction, depending upon the working pressures used.

Features in the construction of the hose are strong inner tubes that are smooth and non-porous and tough, flexible covers that have a maximum resistance to abrasion and aging. Covers are furnished corrugated and colored red and green to distinguish the oxygen from the acetylene line.

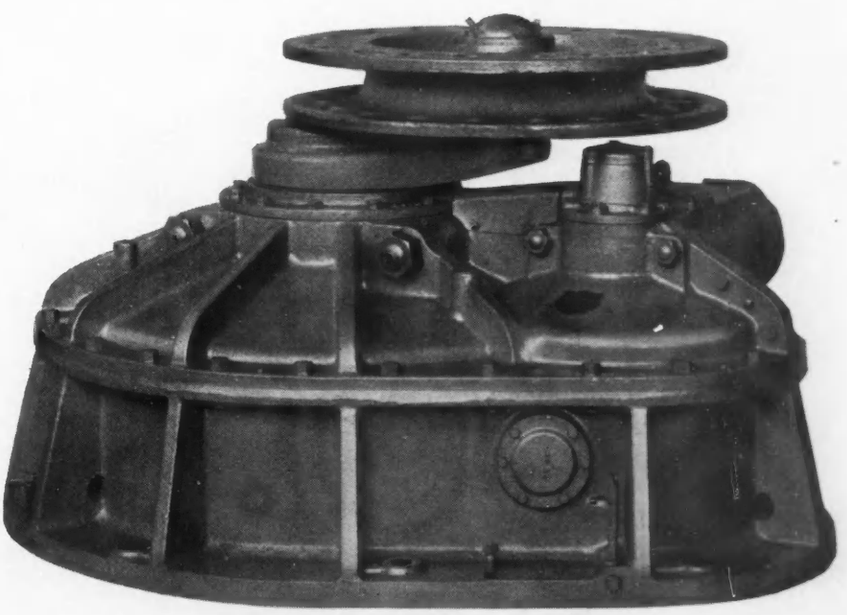
Pumping Power

THE NATIONAL SUPPLY COMPANY

A new geared pumping power has recently been placed on the market by The National Supply Company. This power is known as the National Type G-75 and is of the same general design as the Types G-30, G-50 and G-100 National Geared Powers. It is made for medium field requirements and has a nominal horsepower rating of 75 at 20 S.P.M. The peak torque rating is 371,000 inch-pounds A.P.I. at 20 S.P.M. Regular stroke length is 30 inches with a 24-inch stroke length optional.

A feature of the design is the National rotating shaft construction which brings the pull rod load close to the case and allows an unusually wide shaft bearing spacing. This construction is particularly effective for providing against the effect of severe well loads and maintaining the rotating shaft in original alignment. In addition the case is used to support the load close to the pull rod load itself, the load of the upper bearing being carried by the heavy reinforced upper half of the case. This construction gives a desirable distribution of load over the entire case.

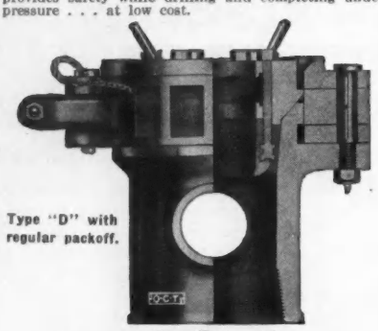
The upper half of the case is split for convenience in assembling and inspection can be made at any time without disturbing alignment. Alloy steel heat treated gearing with wide faced pinions of desirably large diameter provide low bearing pressures and long wear. The first reduction is through a set of carburized alloy steel spiral bevel gears and the second through a set of single helical gears. Tapered roller bearings, selected for compactness and large capacity are used throughout. A special well connection design eliminates wear on the power



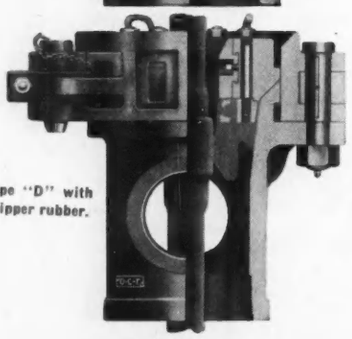
National Pumping Power Type G-75

B. O. P. SATISFACTION!

Give an O-C-T Blowout Preventer a chance to show you what it can do, and you'll be convinced, too, that it's worth its price in any man's money. It provides safety while drilling and completing under pressure . . . at low cost.



Type "D" with regular packoff.



Type "D" with stripper rubber.

OIL CENTER TOOL CO.

QUALITY O-C-T PRODUCTS

HOUSTON, TEXAS, U.S.A.

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Sold Through Supply Stores

For Deep Wells

"They Can Take It" . .

Toughest materials, especially processed to meet rigid tests and backed by 27 years of valve and pump cup specializing — Dragon Cups (*Composition, Nobs* and *Leather*) are built to "take plenty of punishment," *saving your profits, time* and *nerves.*

For Shallow Wells

"On Duty or in Competition — Fearless As the Dragon"

The Dragon Mfg. Co.

Marietta, Ohio

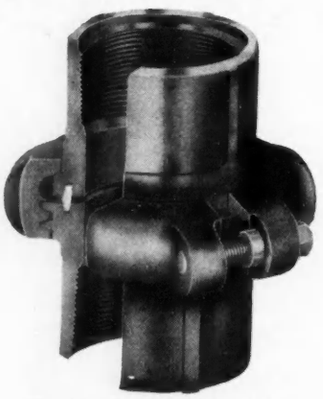
NOTES FOR THE Equipment Buyer and User

disc. This comes on a 2½-inch diameter alemite lubricated replaceable bronze bushing in the connection itself. All enclosed parts are lubricated by a vane type oil pump which, with suitable lubricant, is effective under any weather conditions and operating speeds. Complete information is given in National Descriptive Bulletin No. 221.

Pipe Unions

OIL CITY BRASS WORKS

Oil City Brass Works, Beaumont, Texas, has announced a new Red-Rex Malleable Iron and Medium-Pressure Steel Union as an addition to its line of 6000-pound test unions, which have been on the market for several years.



Red-Rex Malleable Union

According to the manufacturer, these new, lower-pressure unions are unique in their field in that they are identical in construction to those designed for higher pressures. A single draw-screw is employed to make or break the joint. As the screw is tightened, the split collar is drawn together, applying equalized pressure on the two hubs, forcing them into sealing position on the seal ring. Loose threads between the draw collar and hub allow for contraction and expansion and permit misaligned hubs to be drawn together. The seal ring is tapered on three sides to provide a leak-proof seal; one straight side on the ring wedges the ring tightly into the hub to prevent its falling out when the joint is broken.

The Red-Rex Malleable Iron Unions are offered in both "short hub" and "long hub" types. A double-tapered bronze seal ring, which is interchangeable on all Red-Rex pipe unions, provides a positive, leak-proof seal under all conditions of pressure and temperature up to rated capacity. All parts for the malleable iron unions are interchangeable. They are designed for 500 pounds working pressures and are tested to 1000 pounds.

The new medium pressure steel Red-Rex union is designed for 1000 pounds working pressures, and is tested to 3000 pounds. Its parts readily interchange with parts of the malleable iron unions of the same size. Hubs are made of steel to permit welding on lines where this practice is desirable.

The draw screws are of heat-treated alloy steel, cadmium plated, having a tensile strength of 125,000 pounds. These screws are interchangeable on all Red-Rex pipe unions.

Snake Bite Kit

DAVIS EMERGENCY EQUIPMENT COMPANY

A new pocket Snake Bite Kit, which enables a man to treat himself successfully after being bitten by rattler, copperhead, or moccasin, has been developed by Davis Emergency Equipment Company, 55 Van Dam Street, New York, for the use of workers who must enter snake-infested regions.

This kit, which can be easily carried in a vest pocket, contains the following equipment: A tourniquet, which is applied to arm or leg immediately above the wound to prevent the spread of the poison through the body; a stainless steel lancet for opening up the fang holes to permit drainage of the poison; a syringe, which is used for pumping blood and venom from the wound and is specially designed for one-hand operation and application to wounds in either flat surfaces or between fingers or toes; and also antiseptics, bandages, and ammonia inhalants for use if victim becomes faint.

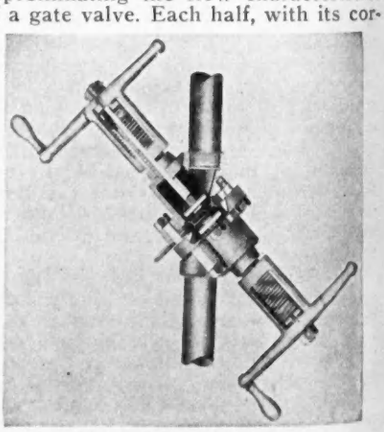
Records show that, if the treatment indicated is applied promptly by the victim himself or a companion and is later followed by medical treatment, recovery is the rule.

Blowoff Valves

R. W. CRAMER & COMPANY

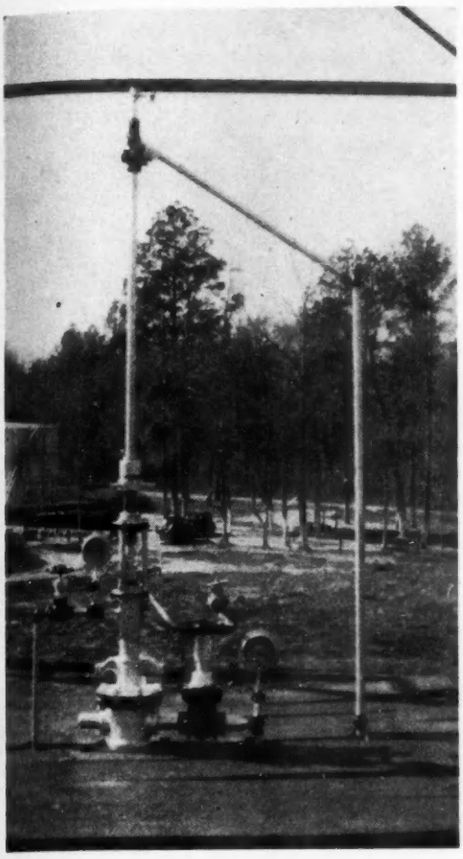
Saving in cost and size in blowoff valves are advantages claimed by the makers for a double valve in a single unit combined with a high-pressure flanged union introduced by the Clyde Division, R. W. Cramer & Company, 67 Irving Place, New York. Made in four stock types these valves will withstand working pressures up to 600 pounds.

Two bonnets hold the single stainless steel seat ring in place. Tightness is assured by lapping the seat ring to the faces of the bonnet flange. The flanges are set at 45° to axis of flow, closely approximating the flow characteristics of a gate valve. Each half, with its cor-



Clyde Blowoff Valve

NOTES FOR THE Equipment Buyer and User



Acme Gas Lift Installation

Gas Lift

ACME GAS LIFT COMPANY

Acme Gas Lift Company, 1423 Maury Street, Houston, Texas, announces completion of a thorough testing period of its Acme Gas Lift, and that it is prepared to install these gas lifts on wells anywhere.

Some of the features claimed for the new lift are: (1) Positive flow level selection from Christmas tree; (2) No continually moving parts in well; (3) No back pressure on producing formation; (4) Low gas/oil ratio; (5) Low in-put operating pressures; (6) Intermittent flow control—for low bottom hole pressures or low allowables; (7) Not necessary to dismantle Christmas tree or pull tubing.

responding pipe section, is removable for access to the valve sections. The exterior of the bonnet sleeve is threaded, giving a valve lifting thread area two or three times greater than the usual amount and an extra deep packing box. The stem is non-rotating to decrease friction in the stuffing box and prolong part life. A square wrench fit at the top of the stem allows oscillation of the valve on its seat to remove dirt or scale. Stainless steel exterior trim with stellited valve seats is used unless otherwise specified.

Rumford Chemical Works Makes Tetraphosphate For Mud

A new plant has been opened for the manufacture of sodium tetraphosphate, by Rumford Chemical Works at Rumford, Rhode Island.

The plant is unique not only in being the only one in the United States for the manufacture of "tetra" but also in mechanical and architectural features, according to A. E. Marshall, president. This chemical is increasingly used as a water-softener, in cleaning compounds, and an essential aid in drilling oil wells, and has been meeting steadily increasing demand. One of its domestic uses is its ability to eliminate "rings" in bathtubs.

Manufacture is a process of evaporating to dryness a solution of orthophosphates and heating the resulting mixture to quiet fusion at a bright red heat. The fused material, sodium tetraphosphate, is slowly cooled in a continuous

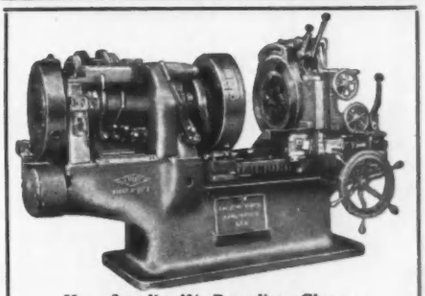
A shipment of core samples received from Bahrein in sealed containers were given a complete analysis at the United States Custom House, Houston, Texas, by a trained corps operating a portable laboratory unit for Core Laboratories, Inc. The samples were analyzed for Bahrein Petroleum Company. Customs officials receiving the samples at Houston are shown at left in picture. The three other men, members of Core Laboratories, Inc., are namely: C. R. Holmgren, W. L. Horner and W. F. Swanton.

REED'S 'B-R' DRILLING BIT WITH WIRE LINE RETRACTABLE CORE BARREL

HARD FORMATION HEAD (Interchangeable with Soft Formation Head)

REED 'B-R' Drill Collar and 3-Blade Drilling Bit with Core Barrel in position

REED ROLLER BIT CO.



New Landis 4¾ Receding Chaser Pipe Threading Machine

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Machine Tools—Metal Working Machinery—Bolt and Pipe Threading Machines—Electric Arc Spot and Butt Welders—Hand Power and Electric Traveling Cranes—Foundry and Forge Shop Equipment

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VISCOSIMETER FUNNEL
Made of Rubber
An improved type of Funnel Viscosimeter — manufactured in accordance with A. P. I. Specifications on Drilling Practice. Made of rubber—non-breakable, and durable — will stand up under hard field usage without requiring frequent replacement.

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NOTES FOR THE Equipment Buyer and User

stainless steel cooler—stainless steel being also used extensively in other parts of the plant. The small glassy beads are then ground to pass a 20-mesh screen.

The building has been designed so that the exterior walls cover and outline the interior machinery, giving it a strictly functional appearance. The entire process is automatic and continuous.

Sodium tetraphosphate has the ability to segregate calcium compounds when they are present in water. Hence "tetra" softens water, provides a soothing bath, eliminates rings on the bathtub, and is valuable in dishwashing preparations. Water thus softened remains perfectly clear. Its other large use, in drilling oil wells, derives from its ability as a deflocculent to maintain the drilling mud in fluid condition.

This year the Rumford Chemical Works celebrates the eightieth anniversary of the manufacture of baking powder, the company's chief product.

B. F. Davidson Killed in Air Crash in India

Buford W. Davidson, export service manager for M. O. Johnston Oil Field Service Corporation, was the victim of an airplane crash near Karachi, India, on February 23. Davidson had reached the halfway mark on an extended trip around the world in the interests of his company and was enroute from Bahrein to Lahore when the accident occurred.

Davidson was first employed by M. O. Johnston Oil Field Service Corporation in 1935. Three years later he made a trip to South America for the company, covering the oil fields of Trinidad, Venezuela, and Colombia, and had just recently completed a trip through Europe, Iraq, Iran and Arabia in his capacity as export service manager.

Welding Eyeshields

Jackson Electrode Holder Company, 15122 Mack Avenue, Detroit, Michigan, has prepared a folder on safety eyeshields for welding, grinding, rock chipping, and similar hazardous work.

Stovall Named Special Representative for Globe

Jack Stovall who for the past seven or eight years has been connected with the Globe Oil Tools Company, recently transferred his headquarters to Houston, Texas, where he will serve as special field representative for the company in order to cooperate more closely with Hake Tool Company in the sale and distribution of Globe drilling, reaming and coring tools. For the present he will be located at the Hake Tool Company offices, 1121 Rothwell Street.

Warner & Swasey Service Man Goes Temporarily to France

L. M. Cole, district manager at Houston for the Warner & Swasey Company of Cleveland, Ohio, announces that Mr. Joseph V. Fal, service man at Houston, is temporarily transferred to France to do supervisory work in connection with a large Warner & Swasey installation. He is being succeeded during his absence by Elmer G. Wrobbel, who is an apprentice graduate of the Warner & Swasey Company and who has been doing service work for the company in the northeastern part of the United States during the past five years.

Higgins Heads Sales of Pittsburgh Equitable Meter Company

In a recent announcement, W. F. Rockwell, president of the Pittsburgh Equitable Meter Company, stated that A. E. Higgins, a vice president of the firm, has been placed in charge of sales for both Pittsburgh Equitable Meter Company and its subsidiary, the Merco Nordstrom Valve Company.

Before he became associated with

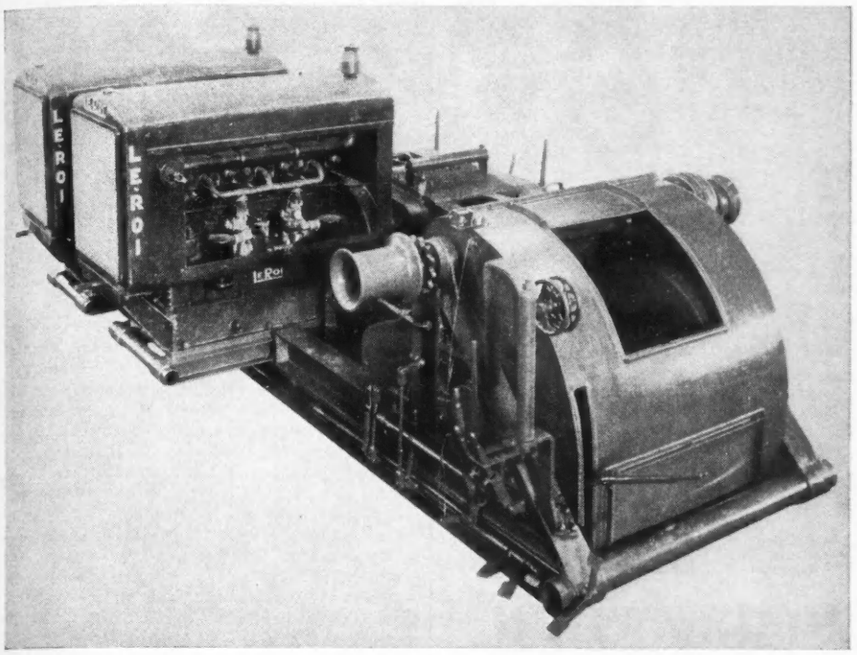
A. E. HIGGINS

Fly Via ESSAIR, INC.
AMARILLO—LUBBOCK—BIG SPRING—SAN ANGELO—AUSTIN—HOUSTON
Convenient Schedules to Texas Points
"WEST TEXAS TO THE GULF"

SOUTHBOUND (Read Down)	AIRPORT TO AIRPORT (Daily Except Sunday)			NORTHBOUND (Read Up)
7:00 A. M.	Leave	AMARILLO	Arrive	6:00 P. M.
7:55 "	"	LUBBOCK	Leave	5:10 "
9:00 "	"	BIG SPRING	"	4:25 "
9:45 "	"	SAN ANGELO	"	3:35 "
11:20 "	"	AUSTIN	"	2:05 "
12:30 P. M.	Arrive	HOUSTON	Leave	12:45 "

"FLYING THE RANGE"
Reservations at Airports and Leading Hotels

NOTES FOR THE Equipment Buyer and User



The photograph shows a new type drilling rig built by The Brewster Company, Shreveport, Louisiana, for Tippett Drilling Company. The unit is powered by two V-type eight-cylinder 6¾ x 7-inch LeRoi engines, equipped with natural gas or butane gas mixing valves, sensitive pressure regulators, pressure gauges, oil bath air cleaners, oil filters, top valve lubricators, dual high tension magnetos, water jacketed exhaust manifolds, temperature gauges, telegraph controls, gasoline starting engines, and Twin Disc heavy-duty type clutches. The engines were supplied from stock by Southern Engine & Pump Company's Kilgore branch. The latter company, having headquarters at Houston, is distributor for LeRoi engines, carrying complete stocks of the engines from 5 to 450 horsepower, together with repair parts.

Pittsburgh Equitable Meter Company, Higgins was secretary of the Natural Gas Section of the American Gas Association. He has long been a prominent figure in the gas industry.

Bob McIntyre Joins Calmec Manufacturing Company Sales

Robert A. (Bob) McIntyre, inventor of the Calmec Streamline Valve, recently joined the staff of the Calmec Manufacturing Company of Los Angeles, and will have charge of engineering and coastal sales for that company.

McIntyre is a graduate of the California Institute of Technology as a master of science in mechanical engineering, and majored in metallurgy and hydraulics during his last year. Since graduating, he has spent some time in the research laboratory of one of the major oil companies; and served in the capacity of resident engineer for the D+B Pump & Supply Company in its Dallas shops. He also has spent considerable time in the Calmec machine shop department and is a practical machinist. During these years he has had wide experience in the oil fields of both North and South America.

Hake Tool Company Appoints Two Sales Representatives

H. W. Hake of Hake Tool Company, Houston, Texas, announces appointment of P. D. Long as representative in Louisiana with headquarters at Shreveport, and J. L. Richardson as representative throughout eastern fields; in charge of sales, service and distribution of the Globe line of drilling, reaming and coring tools manufactured by Globe Oil Tools Company.

Both Long and Richardson have been connected with various manufacturers and supply houses in those territories for a number of years; Long more recently being identified with Emsco Derrick & Equipment Company in East Texas. Both are planning early trips to thoroughly familiarize themselves with present conditions and to make direct contacts with operators throughout their new territories.

Dowell Establishes New Districts In Illinois and Kentucky Areas

Dowell Incorporated announces the establishment of two new operating districts, one at Salem, Illinois, and the other at Owensboro, Kentucky.

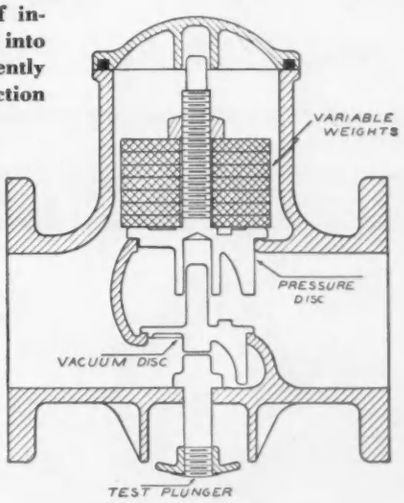
The new district with headquarters at Salem will provide a broader service to the oil industry for the entire state of Illinois. The treating stations now located at Flora and Lawrenceville, Illinois, and Owensboro, Kentucky, will continue to serve the Illinois, Indiana and Kentucky areas as in the past. The Salem office will be quartered temporarily in the State Bank Building. J. H. Courtner, formerly district manager at Lawrenceville has been transferred to Salem in the same capacity. W. W. Love, research engineer and L. D. Brunson, sales engineer, formerly located at Lawrenceville will now be stationed at Salem. Bernard E. Langley, sales engineer at Seminole, Oklahoma, has been transferred to Salem.

To better coordinate management, re-

ENARDO Tank Equipment

"In-Line" Vent Valve

. . . controls vacuum pressure of individual tanks or battery. Flanges into the gas vent line. Can be conveniently located near walkway. Easy inspection provided by hinged cover plate held by thumbscrew. Seating action simply checked by test plunger on atmospheric side at bottom of valve. Pressure variable from 1½ to 16 oz. For detailed information, write for descriptive circular.

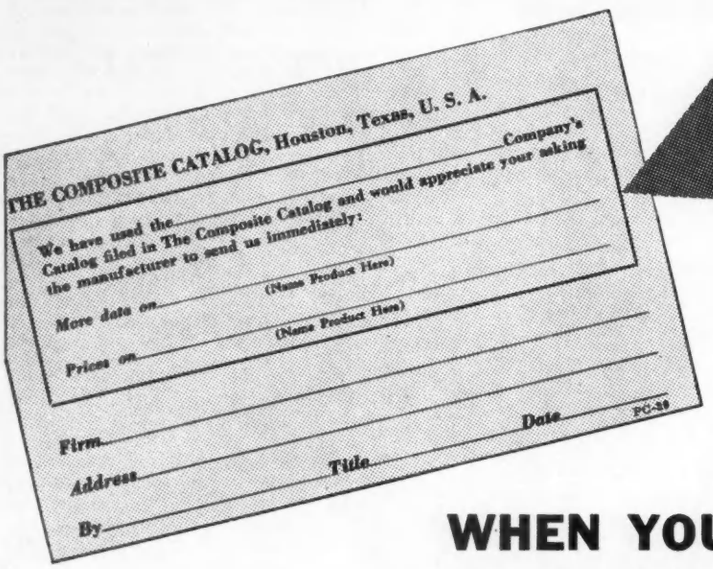


Enardo Equipment conserves enough of the rich vapors to pay for themselves in a short time.

ENARDO FDY. & MFG. CO.
2729 Sand Springs Road
TULSA, OKLAHOMA

"There Is An Enardo Valve for Every Tank Requirement"

. . . use these Convenient Cards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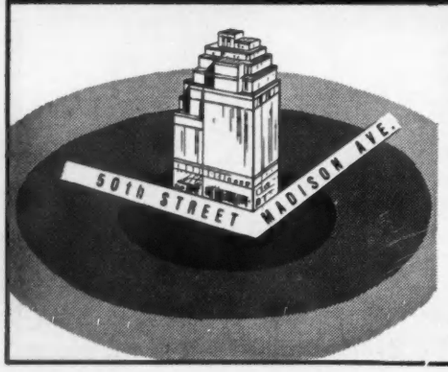
THE COMPOSITE CATALOG
OF OIL FIELD AND PIPE LINE EQUIPMENT

POPULAR AMONG OIL MEN and THE BEST LOCATION IN NEW YORK



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MADISON AVENUE AT 50th STREET • NEW YORK CITY

Notes for the EQUIPMENT BUYER and USER

search, engineering and sales throughout the closely related fields of Kentucky, Indiana and Illinois, Owensboro was chosen for the logical headquarters to serve these particular areas.

The Lawrenceville, Illinois, station which for several years operated under the Lawrenceville office will in the future be operated as a part of the Owensboro district and will continue to serve a greater part of the new work coming up in southern Indiana and the southeastern counties of Illinois along the Kentucky-Indiana line. Leo Courter, who for the past year has been station manager of the Owensboro station has been appointed district manager of the Owensboro district. R. S. Bonham, in charge of the Lawrenceville station since 1937 will continue in charge there.

In addition to its regular acidizing service, the company offers many special services in connection with the chemical treatment of oil and gas wells. It maintains 33 treating stations, 13 district offices and 3 sales offices in the principal oil fields of the United States, Canada and Mexico. General offices of Dowell Incorporated, a subsidiary of The Dow Chemical Company, are located in the Kennedy Building, Tulsa, Oklahoma.

Lane-Wells Company Executive Recovering in Hospital

Rodney S. Durkee, executive vice president of Lane-Wells Company, is in the St. Joseph's Hospital, Santa Ana, California, recovering from the loss of his appendix. Durkee recently completed an extensive trip through the company's branches in the Mid-Continent and Gulf Coast and had just returned from New York. Reports from the Los Angeles office of Lane-Wells Company are that he is expected back at his desk within a short time.

Gun Perforating

Lane-Wells Company, Los Angeles, has published a bulletin on gun perforating service, citing its uses, economies and methods. The perforating procedure is described from start to finish in detail.

Electric Gearmotors

Westinghouse Electric and Manufacturing Company, Pittsburgh, has released a pictorial handbook to show the applications of gearmotors to industrial requirements, one section of which is devoted to the arrangement of electric motors and speed-reduction gears to meet the drilling and producing problems of the industry.

Alloy Steels

Climax Molybdenum Company, 550 Fifth Avenue, New York, has issued a booklet, "Molybdenum Steels in Oil Production," describing and illustrating the use of molybdenum alloys as equipment steels.

Analyses and metallurgy of each alloy is given by SAE number.

Squeaks from the Bull Wheel

Studied Carelessness

"Is Jenks careless with his money?"

"Is he? I've known him to buy bread when he didn't have a drop of gasoline in the tank."

An Eye to the Future

"Why do you want such a big sink?" asked the plumber.

"Well," explained the man who was building a new house, "when my wife leaves in the summer, she's generally gone a month."

Gone but Not Forgotten

"I suppose you carry a memento of some sort in that locket?" said one woman to another.

"Yes, a lock of my husband's hair."

"But your husband is alive."

"Sure; but his hair is gone."

New Dance

Two tired business men were comparing notes on their respective wives.

'My wife is always doing the 'Big Appalachian,'" complained one.

'What d'ya mean?" queried the friend.

"She's always making mountains out of mole hills."

In-Between Age

And how old are you, Bobbie?

I'm just at the awkward age.

Really. And what do you call the awkward age?

I'm too old to cry and too young to swear.

Good Advice

What kind of husband would you advise me to get, Grandma?

You just leave husbands alone and get yourself a single man.

Practical Course

How did you get along in cooking school? Graduated with honors, I suppose.

Better than that, honey—with frying crullers.

Poor Henry

I-er-ah want a pair of gloves for my wife.

What color; kid, suede or lisle; and how many buttons, two, four, six, eight?

I don't care, so long as they don't button down the back.

Nodded Approval?

Do you think the congregation approved of my first sermon this morning?

I am sure some of them did, because I saw some of them nodding.

Caught

Why did the prof bawl out Gene for cheating in exam.?

Aw, he just saw him counting his ribs during physiology test.

No Danger

"What is this stuff I've just picked?"

"Wow! That's poison ivy!"

"Well, don't get so excited,—I'm not going to eat it."

Truthful

"What is the defendant's reputation for veracity?"

"Excellent, your honor. I've known him to admit openly that he'd been fishing all day without getting a single bite."

Strangers

An enthusiastic golfer came home to dinner. During the meal his wife said:

"Willie tells me he caddied for you this afternoon."

"Well, do you know," said Willie's father, "I thought I'd seen that boy before."

Couldn't See

"Did you get that man's number?" a traffic officer asked another policeman.

"No, he was going too fast."

"Say, that was a fine looking gal in the car."

"Wasn't she!"

Strong

"Lesh go home now, Joe."

"Naw, I'm afraid to go home. Wife'll shmell m'breath."

"Hol' your breath."

"Can't. Sh'too strong."

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College graduate, Mechanical or Petroleum Engineer, with not less than five (5) years' practical experience in production engineering. Opportunity for man with sales and executive ability to become district manager.

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- **STAR BOTTOM** — Used for cutting the sand loose.
- **CHISEL BOTTOM** (In Pump) — With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

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